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TWO VOICES CLAMOR FOR INTERNET'S ATTENTION

No shortage of speech-enabling apps,
but vendors split on implementation

BY EDWARD J. CORREIA

As recently as 18 months ago, there was little talk about a voice-enabled Internet. Suddenly there are two sets of specifications competing for developer attention. On the heels of the mid-July release of SALT 1.0, the Speech Application Language Tags specification for voice-enabling Web services, IBM Corp. said this month that it will embrace XHTML and VoiceXML to deliver voice capabilities to WebSphere applica-



Kirusa's Sajor believes there is room for both SALT and X+V.

tions, and is scheduled to release tools in the fall. While both specifications are being considered, neither has won endorsement from a traditional vendor-neutral standards body.

Do enough people care about voice-enabling applications to justify two competing sets of specs?

According to James Masten, Microsoft Corp.'s director of marketing for .NET Speech technologies, there is plenty of

► continued on page 18

.NET, Phase Two

Microsoft's second act urges companies
to go forth and build on first-act vision

REDMOND, WASH. — It's been almost exactly two years since Bill Gates unveiled his vision for a software development ecosystem built on the exchange of XML-based Web services. The .NET initiative, originally quite vague, expanded and solidified throughout 2000 and 2001, with the introduction of the .NET Framework, the Common Language Runtime (CLR) managed execution environment,

the new C# programming language, and a revamping of Visual Studio and Visual Basic.

Throughout that first year, Microsoft Corp. introduced acronym after acronym, and a range of new software tools, APIs and runtime environments ranging from ADO.NET to ASP.NET, from .NET My Services to a whole variety of products called the .NET Servers.

After more than a year of beta releases, what Microsoft now calls the first phase of .NET was formally delivered at Fawcette's VSLive conference in February. Developers finally were able to get their hands on the shrink-wrapped Visual Studio .NET, and download the final bits for the .NET

ALAN
WATCH



ALAN
ZEICHICK

UML 2.0 Now Pushed Back To Next Year

Wrangling over superstructure delays
final revision of modeling language

BY DAVID RUBINSTEIN

Finalization of version 2.0 of the Unified Modeling Language has been pushed back to early next year, according to the director of standards at Object Management Group Inc., which oversees the specification.

According to Fred Waskiewicz, the infrastructure and object constraint language revisions are virtually complete, and he expects recommendations from OMG's Analysis and Design Task Force to be presented to the board of directors at the group's session scheduled for late September in Helsinki, Finland. Another round of revisions to the superstructure and diagram interchange portions of UML, though, will delay completion of the full UML revision, which had been expected by mid-2002.

The infrastructure revisions

seek to improve UML's architectural alignment with other OMG standards such as the Meta Object Facility (MOF) and XML Metadata Interchange. The superstructure changes involve the semantics and notation of the language, Waskiewicz explained.

While he acknowledged the delay was due in part to the complexity of the issues being addressed in UML, he said the primary reason is that OMG wanted to get the new UML specifications in sync with the revisions to the Meta Object Facility as part of OMG's broader Model Driven Architecture initiative. "MOF defines what the UML metamodel is," Waskiewicz said. "Technically, getting it all aligned just makes sense." The MOF 2.0 core will be on the agenda for the Helsinki meeting, as will the

► continued on page 14

Framework and the CLR.

Microsoft's next key product introduction in the .NET family will be its revamped server operating system. The first release candidate of Windows .NET Server, the follow-up to Windows 2000 Server, was made available in July, and includes an integrated .NET Framework and CLR, a built-in UDDI server, tightened security and a number of other enhancements, some of which first appeared in Windows XP (www.microsoft.com/windows.netserver).

There also will be a service release of Visual Studio .NET, currently code-named Everett, that will come out simultaneously with the final bits of Windows .NET Server; according to lead product manager John Montgomery, the service release only contains bug fixes and addresses minor issues, and will not offer new features or support new protocols, such as WS-Security.

But although Windows .NET Server was on the agenda during

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WEBGAIN SELLS OFF

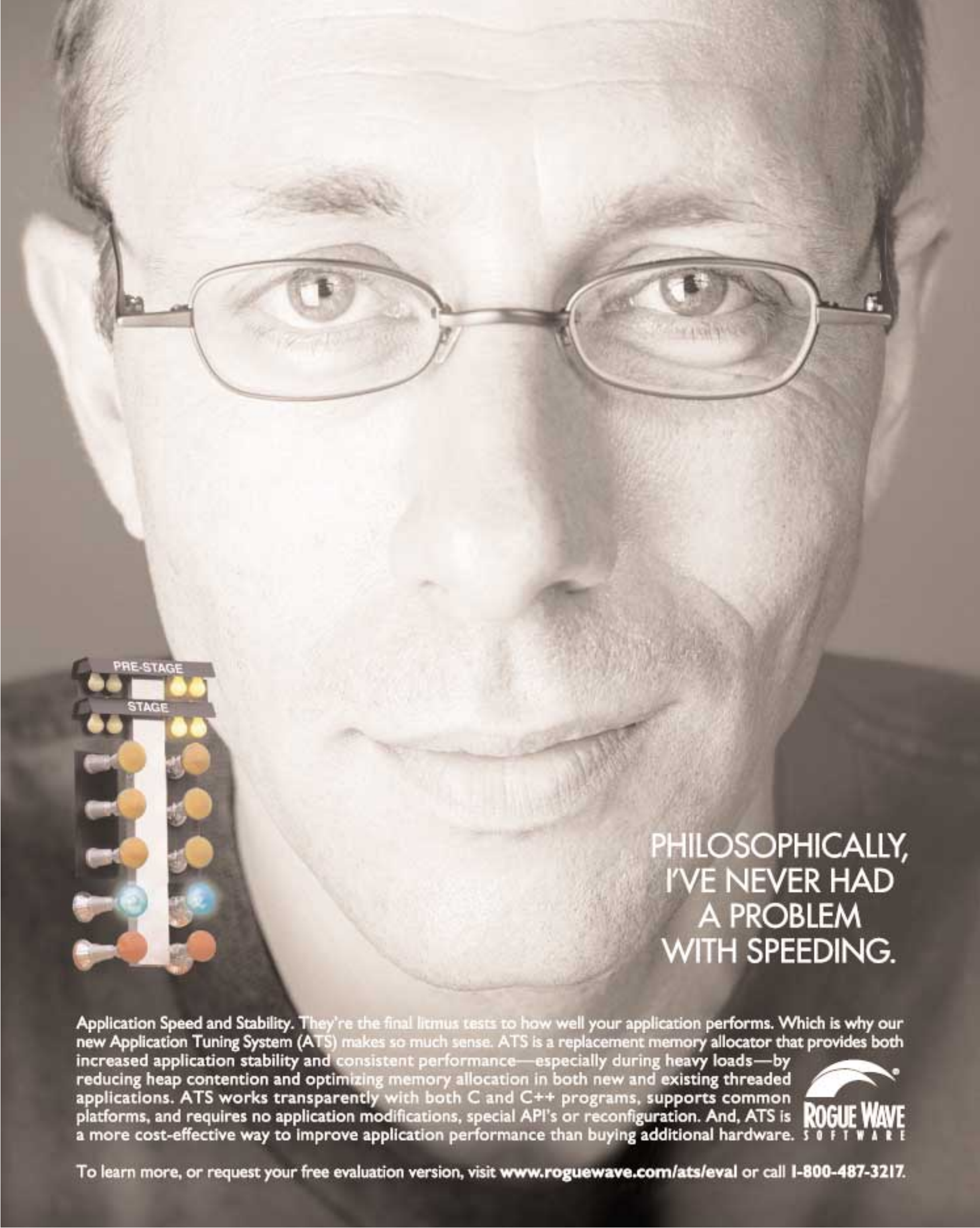
BY ALAN ZEICHICK

After months of silence regarding its apparent cessation of business activity, WebGain Inc. issued a terse statement on July 30 confirming that the company has sold its TopLink data integration tool to Oracle Corp., and that its primary goal is to sell off its remaining products.

As reported in SD Times ("WebGain Appears to Disappear," July 1, page 1), the company had laid off the majority of its staff in the second quarter.

In the statement, WebGain asserted it is "facilitating transition of all customer support to third parties."

The company listed its remaining products as WebGain Studio and related assets, including the VisualCafé IDE, Quality Analyzer and Structure Builder; Business Designer; and Application Composer. ■



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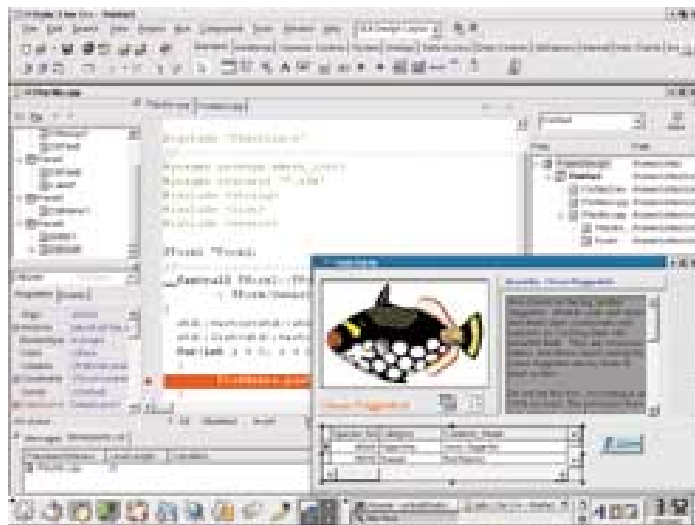
Borland Puts .NET in Delphi, C++ in Kylix

BY ALAN ZEICHICK

Borland Software Corp. isn't ready to concede the .NET market to anyone, not even Microsoft. And while the company upgrades its Delphi IDE for Windows to encompass a preview .NET compiler, it also is enhancing its cross-platform story by including a Linux compiler with Delphi. Separately, Borland announced that with the release of its Kylix 3 IDE for Windows, the company is offering the C++ languages as well as its own Object Pascal-based Delphi language.

Delphi 7 Studio was due to ship on Aug. 6, said Alison Deane, senior director of product marketing, who said that the new "studio" moniker reflects its inclusion of Model Driven Architecture-based development as well as the first-ever bundling of the Object Pascal version of Kylix with the Windows-based suite. "A Delphi developer is really getting a lot of functionality all in one solution."

The biggest new feature in Delphi 7, Deane continued, is its targeting Microsoft's .NET, with



Kylix 3 for Linux's editor is aware of Object Pascal (Delphi) and C++ syntax.

the inclusion of a Delphi for .NET Compiler Preview as part of the package; she added that future releases will have versions of the .NET compiler "with more features," and that's why this is termed a preview.

John Thomas, a product manager for Delphi, described the .NET Compiler Preview as including the Microsoft Intermediate Language code generator, .NET Framework and other

runtime components needed to make "Delphi into a first-class citizen within the .NET world." Next year, Borland will ship its own Delphi for .NET Framework, described as helping developers convert existing Delphi apps to run on .NET.

While Thomas admitted that the Delphi compiler won't run separately within Microsoft's Visual Studio .NET development tool—"we're not providing

a plug-in at this point, though it's technically feasible"—he said that the compiler generates Common Language Runtime apps that can access any .NET Framework objects.

Thomas said that the native Win32 Delphi compiler also would provide hints and warnings, showing where specific Delphi language constructs would have trouble making the transition for execution within the CLR using the .NET compiler. "We're trying to provide a painless migration path for our existing Delphi developers to the .NET world."

The types of code constructs that won't map to .NET, he said, include enums, pointer operations and attempts to find the memory address of specific variables. While Thomas said that these are similar language changes to those that Microsoft's Visual Basic and Visual C++ developers have had in moving their code to .NET, he added, "it's a lot more minor. Delphi language maps really nicely to the common language specification."

The other big change, Thomas said, is the inclusion of a new UML and OMG-compliant MDA design tool with the Architect edition of Delphi 7. "There is a UML modeler and a Model Driven Architecture piece that fits in [to the modeler]. This allows you to create your models and patterns using standard modeling practices and import those into the Delphi IDE in the Delphi language. You also can import and export patterns from other design tools." This, he claimed, "gives UML modeling without the steep price or learning curve of Rational Rose."

Delphi 7 also includes new features for rapid application development for Web-based development, as well as the inclusion of the Delphi language version of Kylix in the box, including both the IDE and the compiler. "This [cross-platform support] is something that our developers have been wanting for a number of months," said Deane.

Deane said that Delphi 7 Studio will appear in four editions.

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Next Up for J2EE: Web Services, JCA 1.5

BY DAVID RUBINSTEIN

With a focus on Web services and the impact of application servers on larger computing systems, Sun Microsystems Inc.'s Java Community Process executive board has released the final draft of the Java 2 Enterprise Edition platform version 1.4 into public review.

The review period ends Aug. 17, and Mark Hapner, distinguished engineer at Sun and co-specification lead on J2EE 1.4, said the platform should be released as a final recommendation in the first quarter of next year.

The 1.4 release addresses many of the concerns Java developers had after the release of version 1.3, such as a lack of a coherent Web services strategy and what they termed a flawed connector architecture.

J2EE 1.4 addresses Web services by mandating, among other things, Java API for XML-based RPC Call (JAX-RPC), which is available as part of the Java Web Services Developer Kit. JAX-RPC, Hapner explained, offers developers a

method for dynamically invoking Web services and supports SOAP attachments, something developers called an important omission from J2EE 1.3.

"The full delivery of JAX technologies into J2EE occurs in version 1.4," said Hapner, referring to XML binding, parsing and messaging. Java API for XML Messaging (JAX-M) has been split, Hapner said, with the SOAP messaging layer required in 1.4. "Java developers will be provided with interoperability with the full Web services world and not suffer from interoperability issues injected by J2EE itself," Hapner said. "We want to provide a deep implementation of Web services technology in the platform in a way that extends the existing component and container architecture."

Hapner said the new platform version moves away from XML DTDs toward schema-based descriptors, but in a way that is backward-compatible with existing J2EE applications. "It provides better extensibility and keeps J2EE modern," he explained.

The only piece of the Web services puzzle that might not be delivered with the rest of the specification deals with deployment descriptors, which define how to package a Web service and how an app server can deploy it, Hapner said. He did say there is a strong consensus in the working group, however, and that any delay in finalizing the specification should be a minor one.

In another major enhancement, the proposed platform calls for the use of the upgraded Java Connector Architecture version 1.5, which provides for two-way asynchronous messaging—a functionality developers believe is crucial to integrating data and applications. "That was the No. 1 capability lacking in [JCA] version 1.0," said Brian Reed, principal evangelist at Data Direct Technologies Inc. "Now, having the data and the application able to call each other provides new kinds of opportunities for developers to reuse code" from the

database. "You can't use J2EE, or .NET, as an overriding platform without having plug-and-play for non-Java or non-.NET resources."



Outside resources now can be plugged in, says Data Direct's Reed.

Hapner defended JCA 1.0, saying that as a way to request a service from an external system, it was well done and delivered on its goal. The need, he admitted, was to add a way for the external system to deliver information to the J2EE systems and app servers asynchronously.

In JCA 1.5, according to Hapner, the message-driven bean component model has been broadened to support what he called an open-ended messaging architecture. "Developers can write connectors that flow different message types, such as mail, through to the message-driven beans. External systems want to flow alerts into message-driven beans, and developers can create a message type to encapsulate those" types of alerts, he said, citing as an example a developer writing a

resource adapter for message dispatch into the bean container. "It's designed for container-level integration," Hapner said, adding that J2EE containers now will be extensible across all products that implement the specification.

Another important enhancement, according to Hapner, is two specifications that deal with managing application servers in the context of larger computing environments, and creating a standard way to deploy applications to the app servers. "We're branching the platform out with this," he said, "from writing portable J2EE apps to covering the aspect of the impact of an app server on a larger environment."

Other new requirements in J2EE 1.4 include support for JDBC 3.0, and JSP 2.0, which defines the creation of common fragments of JavaServer Pages for reuse. Also, Java Authentication and Authorization Service (JAAS) is a requisite in 1.4, as it is already built into the underlying J2SE 1.4 platform. "This allows an existing authorization infrastructure to be plugged into an app server instead of the app server creating another authorization layer," Hapner said.

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News Briefs

COMPANIES

Sybase Inc. has stated that its enterprise database, Adaptive Server Enterprise, soon will be available on Mac OS X. The company also has developed Open Client for Mac, an Internet-enabled developer toolkit for developers delivering Mac applications across a variety of database systems . . . **SlickEdit Inc.**, which sells a popular developers' IDE, and **Serena Software Inc.**, a maker of change-management software, are partnering to jointly develop tools for Windows, Unix and IBM mainframe developers that combine editing and change-management functions . . . **PointBase Inc.** will be combining its Java-based embedded databases with **Xora Inc.**'s wireless application extensions to create an integrated set of tools that give database capabilities to J2ME-based devices linked to enterprise applications such as SAP or Siebel . . . **Sun Microsystems Inc.** has acquired **Afara Websystems Inc.**, a company that has been developing UltraSPARC processor technology.

PRODUCTS

MigraTEC Inc., a maker of code-migration tools, has released a version of its **64Express** for AMD's upcoming Opteron and Athlon processors. The tool automates the process of porting 32-bit C/C++ Linux apps to the new 64-bit chips. 64Express sells for \$25,000 per application or between 10 cents and 25 cents per line of code . . . **Alphora**, a division of Softwise Inc., has released **Dataphor Data Access Components**, a set of controls for Visual Studio .NET that allow developers to switch between DB2, Oracle, SQL Server and other databases without changing queries. They also dynamically read rows into database buffers based on user navigation; allow incremental searching based on current sort order of an arbitrary array; and support data arranged in dynamic master/detail relationships. The components are priced at \$499 per developer, with no runtime royalties . . . **Macadamian Technologies Inc.**'s new **CodeReview** add-in for Visual Studio .NET is designed to help with code reviews by letting developers add comments to a project file, navigate through the comments and implement code suggestions easily. It also lets developers track the status of code reviews. The tool is priced at \$25 per developer . . . **Microsoft Corp.** has reaffirmed that its **Windows 2000 Service Pack 3** and **Service Pack 1 for Windows XP** will be available late this summer. The company also released the **.NET Framework Data Provider for Oracle**, which lets ADO.NET users link directly to Oracle databases, instead of using a slower OLE DB driver. In addition, Microsoft will release **Windows Media Player 9**, code-named **Corona**, on Sept. 4 . . . **PowerTAP Pro** is a new in-circuit emulator from Applied Microsystems Inc. The ICE supports 11 processors, including seven different models from Motorola and IBM. The \$5,490 kit will include one JTAG emulator, an MWX-ICE or CodeWarrior debugger, Ethernet interface and cables . . . **OpenLink Software Inc.** has updated its **ODBC driver ecosystem** for Mac OS X. The new drivers, for version 10.2 of the operating system, include an Aqua-based ODBC administrative applet that is more consistent with OpenLink's Linux and Windows drivers . . . **AdventNet Inc.** has shipped the fourth version of its **AdventNet Middleware Manager** for BEA's WebLogic app server. The JMX-certified manager now offers end-to-end views of individual Web transactions in clustered environments, and can provide root-cause analysis of alarms. The release also can monitor BEA's Tuxedo JOLT connections . . . **Sun Microsystems Inc.** has updated its **Java 3D API**, a scene graphic-based API for 3D graphics. Version 1.3 now offers depth-sorted transparency, texture cube mapping and other features targeted at high-end visualization . . . **Nvidia Corp.** has released its **Cg Compiler** as open-source software. Cg is the company's language specification for creating special effects and real-time graphics in C/C++; it was developed in conjunction with Microsoft, and is compatible with Microsoft's DirectX 9.0 multimedia APIs . . . **Visual Numerics Inc.** has updated its **JMSL** set of mathematical, statistical and charting classes for Java. Version 2.0 implements new charting functions, more mathematical and statistical features > continued on page 18

VisiComp Instruments Software Debugging

Now-shipping RetroVue traces Java app execution

BY ALAN ZEICHICK

After its debut appearance at last spring's JavaOne conference, and early deployments to a handful of customers, VisiComp Inc.'s RetroVue real-time software analyzer is now generally available. This initial release, labeled version 1.1, provides what the company characterizes as a "total recall debugger" for Java developers. The product alters the Java code and classes, adding instrumentation that logs many parts of the execution for post-mortem analysis.

Ron Hughes, founder and CEO of VisiComp (www.visicomp.com), described RetroVue 1.1, which began shipping at the end of July, as "the first version we're shipping for revenue. What we had at JavaOne was a technology demonstration, and since that time we've rounded out the product, worked a lot on usability and performance improvements, and had it out in beta to almost 40 users. We're now ready to start selling."

The biggest improvement, said Hughes, is that RetroVue works on a disk-based model, rather than a memory-based model. "It used to be that when it was showing what your program did, it had to load everything into

memory. That obviously put constraint on the maximum size and duration of the program you can debug with it," he said. "Now it all operates off of files on the disk, so there's no reasonable limitation to how long a run you can visualize; it just depends on how much disk space you've got."

Hughes added that only a few years ago, the cost of disk space would have made a product like RetroVue unfeasible. "But you can go get a 100-gigabyte disk drive for about a hundred bucks these days," he said, laughing that the company had even toyed with the notion of bundling a large-capacity hard drive with the debugger.

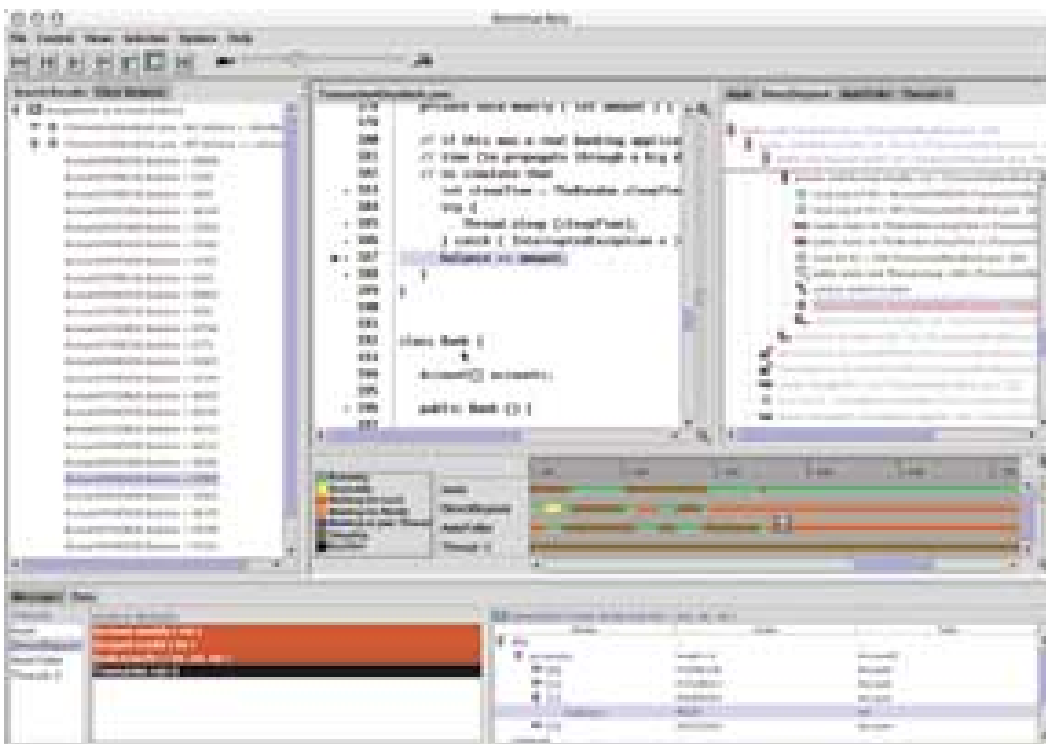
According to Hughes, RetroVue solves a hole in the development space, which has a dearth of runtime tools. "There are debuggers and there are profilers, and not a whole lot more. Conventional debuggers and profilers really gave you the same functionality today that they did 20 or 30 years ago. What can you do with a debugger? You can set break points, pause the execution [and] examine the values of the variables." That's about it, he claimed, compared with what RetroVue does: "This is the first piece of technology,

particularly for Java development, that is new for runtime tools."

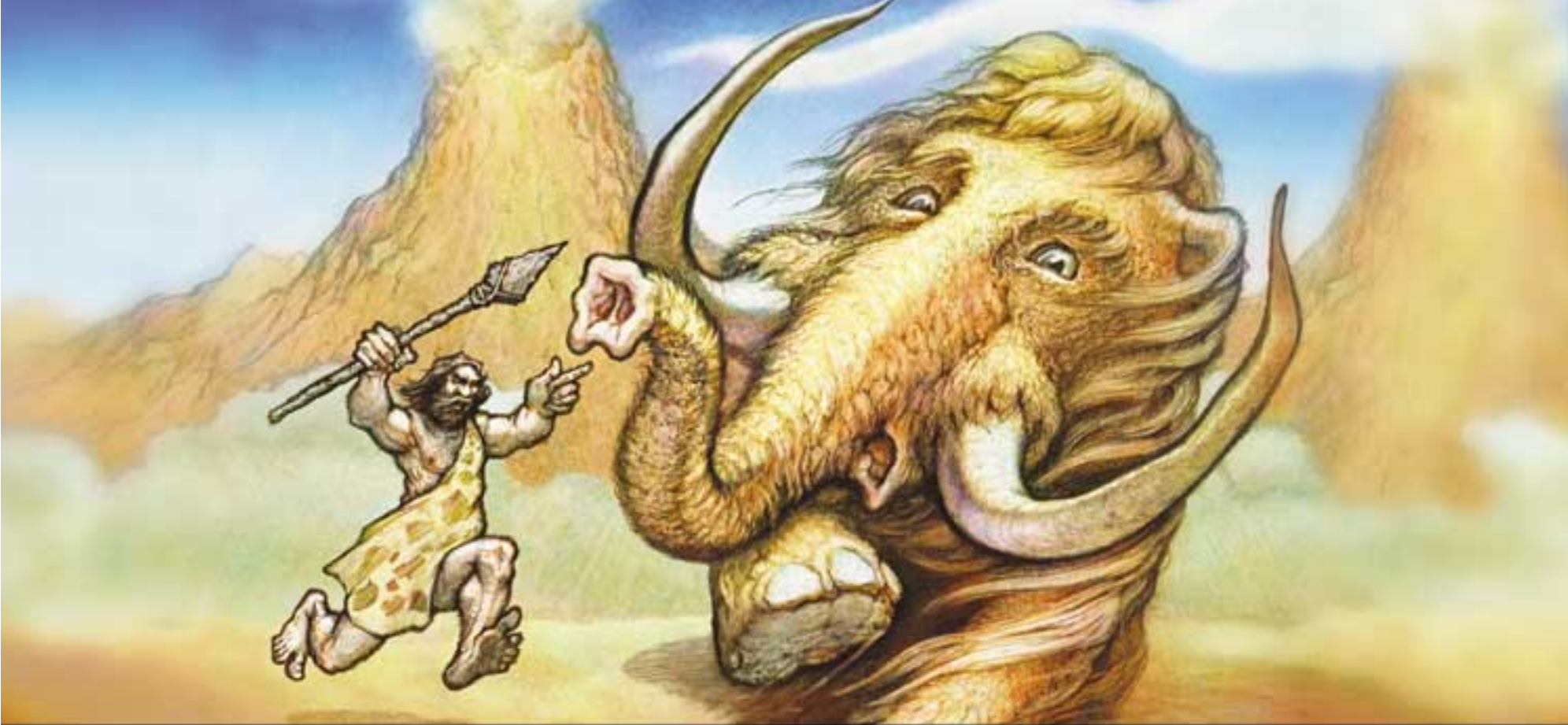
Hughes differentiates RetroVue from post-deployment "flight-recorder"-style applications, because RetroVue logs and gathers data from nearly all aspects of the Java app's execution. "There is a lot of similarity in the underlying technology," he said, "but our product is intended to be a developer's tool, and be executed in the development environment. We're willing to pay the price, because of performance, because we instrument everything." The price, he admitted, is that RetroVue slows down execution.

"The whole premise of the flight-recorder tools," Hughes added, "is that some bugs may get by you, through the QA process, and end up in the deployed program. Fair enough, that's true. But when you set up these flight-recorder tools, you have to tell it what you're interested in having the program record. But if you don't know where the bug is, you don't know what to instrument. You can't instrument everything, because it would have too much impact on performance."

RetroVue is priced at \$995 per developer seat. ■



RetroVue captures log data to allow developers to step backward and forward through an application's test execution.



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Apple Revs Mac OS X Server, Good News for Developers

New features for Web services, compiling, server-side apps enhance platform

BY CHRISTINA M. PURPI

The Macintosh generally has not been considered a bastion of server-side enterprise devel-

opment. So in order to make the platform more appealing, Apple Computer Inc. has added 50 new developer-centric fea-

tures to the latest version of its Mac OS X platform.

Code-named Jaguar Server, Mac OS X Server 10.2, an-

nounced at MacWorld last month, adds support for the latest version of the GNU Compiler Collection (gcc), a server-

optimized JVM and added support for SOAP and XML RPC (Remote Procedure Call), which extends the platform's Web services capabilities.

One of the benefits of the Mac OS X Server for developers is that its kernel is based on FreeBSD, and therefore makes it easy to port applications from other Unix platforms. How well has its 18-month message been received? According to Apple, more than 46 percent of Apple Connection members are Unix or Java programmers. "It's an ideal platform for developers," said Tom Goguen, director of server software at Apple, because "it just works."

He claimed that Apple is getting a great deal of interest from enterprise tool vendors, such as Borland, Oracle and Sybase; the latter two have added Mac OS X support to their enterprise data products. "We provide all the tools you need in order to bring an app over to the platform and get it up and running," Goguen said. Jaguar Server now includes gcc 3.1, which has improved support for C++, and as a result, faster compilation times. In addition, the JVM is now optimized for the server, instead of just the desktop. "You're getting more horsepower for [your] server applications," said Goguen.

"Anything a developer would need to develop a Web service or Web-based application is there, built into the platform along with tools and support for programming right down to the Unix layers of the platform," claimed Goguen.

The server version of Mac OS X 10.2 also includes Apache Tomcat, which runs JavaServer Pages and servlets; as well as Apache Axis, a project that delivers SOAP and XML RPC. User interface tools for MySQL as well as built-in PHP support are now included with the platform.

Apple also has added a new set of LDAP version 3-compatible directory services APIs to the Mac OS X Server, according to Goguen.

Mac OS X Server 10.2 will be generally available on Aug. 24 and will cost \$499 for a 10-client edition and \$999 for an unlimited-client edition. ■



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- thread deadlocks, stalls and race conditions
- untested code



MetaMatrix Emphasizes Modeler in 3.0

BY CHRISTINA M. PURPI

Reflecting the significance of its modeling tool within its product line and overall strategy, MetaMatrix Inc. has broken out its MetaBase metadata management system and modeling tool, originally an add-on to its server, as a stand-alone product. MetaBase is still available as a bundle with MetaMatrix Server in the recently released beta version 3.0 of what the company now calls its MetaMatrix System.

"People who buy this class of software are used to managing

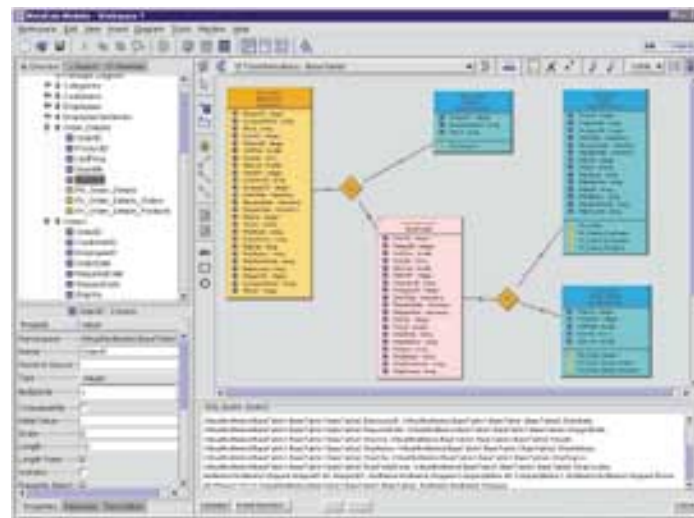
databases and writing programs against databases," said Michael Lang, co-founder and executive vice president of sales and product development. "Our goal is to make middleware look and act like a database; we have tools that let the system be administered like a database."

New features within the system, according to Lang, include a SOAP interface, which is part of the server, a MetaViewer and a Global Data Dictionary, which lists user-defined data types, both new to the Modeler.

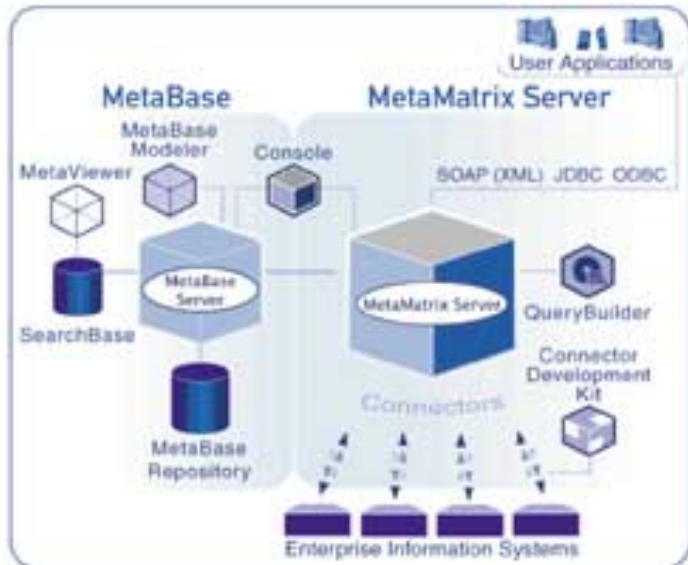
MetaMatrix System is model-driven, which according to Lang eliminates the need to do heavy programming, and is based on Object Management Group's UML, MOF and XMI specifications, in addition to XML. The SOAP interface is new to version 3.0 of the server, said Lang. Another new feature is MetaViewer, part of the Modeler, a browser-based search tool that allows one to search metadata models and data-types via the Internet or an intranet.

Version 3.0 also adds data-type models and the Global Data Dictionary, which is a complete description of data sources inside or outside an enterprise, according to Lang. With MetaViewer, it is now possible to look into MetaBase's metadata management system and see all the data elements that exist across an entire organization.

What differentiates MetaMatrix from traditional data modeling tools, claimed Lang, "is that we have implemented the Meta Object Facility, which gives developers a way to define metamodels for various kinds of sources using a single language." The benefit, he explained, is that information can be related



The Modeler shows structural transformations from one or more classifiers.



Both the MetaViewer and the Global Data Dictionary are new to version 3.0.

in models while remaining in these different sources. Before, it was impossible in models, he went on, to make relationships between different information systems.

"We are middleware that looks and behaves like a database," said Lang. With this release, MetaMatrix (www.metamatrix.com) is looking to push itself into what analysts are now calling the Enterprise Information Integration market.

While MetaBase is now offered as a stand-alone product, MetaMatrix Server requires

MetaBase to provide the metadata for integrating disparate data sources. MetaMatrix System runs on Solaris and Windows using BEA Systems Inc.'s WebLogic, IBM Corp.'s WebSphere and the open-source JBoss app servers.

Version 3.0 of MetaMatrix System went into beta testing on July 23 and will be generally available on Aug. 29, according to Lang. Pricing for the system ranges from \$100,000 to \$350,000 depending on the number of sources connected to the infrastructure and the number of processors. ■

BORLAND

< continued from page 3

The most comprehensive, Architect Edition, which will include the UML and MDA components, will be priced at \$3,499 per seat; an Enterprise Edition, which has UML modeling but no MDA components, is \$2,999. The \$999 Professional Edition leaves out the modeling tools, but now includes Web services functionality—in Delphi 6, Web services were supported only by the Enterprise Edition. Finally, the company is offering a \$99 Personal Edition targeted at educational applications. Deane also pointed out that Borland's data-access

connectors, called DataSnap, have moved from the license-free pricing model with Delphi 6 to royalty-free license with Delphi 7.

In addition, Borland carried out its original Kylix Project premise, which was to deliver both Object Pascal and C++ to Linux developers. The new Kylix 3, now shipping, adds a C++ compiler to the IDE, said Deane. "The majority of Linux developers have migrated from Unix, and predominantly the language they were using was C++. Being able to provide that C++ language in a RAD environment is key to aid and abet bringing numerous applications to the Linux platforms." ■

J2EE 1.4

< continued from page 3

One Java technology that is not mandated in the new platform is Java Network Launching Protocol (JNLP), although Hapner said it can be used with J2EE 1.4 to extend services provided through server-side applications to a client device via dedicated client access to the service.

"We've got a number of technologies that we expect will be used with 1.4 in addition to the required APIs," Hapner said.

While Reed said he believes there has been great improvement in J2EE, he insisted the Java Community Process will have to take a harder look at security and the ability within the platform to manage loosely coupled transactions. ■

Stability the Goal of Eclipse 2.0

Open-source tool integration platform enhanced

BY DAVID RUBINSTEIN

While admitting there is nothing for developers to jump up and down about in the recently updated Eclipse development tool integration platform, board members from the Eclipse.org consortium claim that better stability and other new features in version 2.0 will allow the platform to remain substantially the way it is for a number of years.

"Version 1.0 was supposed to be the one to get people excited," said Todd Olson, vice president of products at TogetherSoft Corp. and a member of the Eclipse.org board of stewards. "It was lacking in some areas, but now we have the stable version."

Rational Software Corp.'s Dave Bernstein, who sits on the Eclipse board, said that in version 1.0, "the user interface area has some good things and

things that weren't so good." He touted improvements to usability and said continuing future releases will be modest. "This reduces the amount of wheel-reinventing vendors must do," he said.

Eclipse Chairman Skip McGaughey, of IBM Corp., said the initial release "met more than we could have imagined in terms of user acceptance. We're changing how developers create code. They no longer have to write their own platform infrastructure." As J2EE technology becomes more complex, and the cost of redeveloping infrastructure pieces again and again grows, McGaughey said the only way companies can deliver tools in a timely manner is through collaboration and cooperation.

It is the broad acceptance of Eclipse, McGaughey said—

claiming 1.8 million download requests from 125 different countries since its November release—that has taken the platform in directions that were not originally envisioned.

"People are using it to build application frameworks, and to create tools for real-time operating systems," McGaughey said.

Eclipse, according to McGaughey, targets both open-source developers and companies that wish to take the technology and create products on top of it. "Think of this as Apache for tools," he said, claiming Eclipse's licensing is modeled loosely on the Apache license.

Among the feature enhancements in version 2.0 are improvements to the help system and platform debugging, and an easier integration with third-party tools. It is available for download at www.eclipse.org. ■



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IBM, Microsoft Tune Up Database Offerings

DB2 8.1 goes into beta; SQL Server moves toward 'Yukon' vision of unified data

BY ALAN ZEICHICK

Two of the industry's major relational database systems—IBM Corp.'s DB2 and Microsoft Corp.'s SQL Server—are under-

going major enhancements, with the latest update of DB2 just entering beta, and the next version of Microsoft's database evolving toward a 2003 release.

According to Jeff Jones, director of strategy for IBM's Data Management Solutions group, the new DB2 version 8.1 is for Linux, Unix and Win-

dows; it is not an enhancement to the separate version of DB2 for IBM's mainframes and midrange systems. The new release is the successor to ver-

sion 7.2, which came out in June 2001. "We have a strange history with version numbers," Jones laughed, adding that he expects the update to be generally available in the fourth quarter.

Jones described the new release as having three main goals: to make it easier to develop DB2-based applications from external IDEs, specifically IBM's WebSphere Studio and Microsoft's Visual Studio. NET; to broaden XML and Web services support; and to include more high-availability features.

"We are equally supportive of .NET and J2EE. We've had an ongoing relationship with Microsoft, and DB2 will be running on Windows .NET Server on day one. We have been weaving our tools together with Visual Studio, Visual C++ and Visual Interdev, as we have in the past, with plug-ins, and that will continue. We have the same ongoing relationship with the WebSphere Studio team," said Jones, who added that there isn't the same level of integration with other vendors' IDEs, such as Sun's Sun ONE Studio.

New to the version is an administrative interface for programmers and DBAs, called Development Center. "The center lets you generate SQL procedure-based or Java-based stored procedures and user-defined functions," Jones said. "There have been tools in the past to do that, but this is more automated."

On the XML front, Jones complained that his competitors have muddied the waters, alluding that Oracle has been spreading misinformation. "I won't name names, but a particular vendor in Northern California has decided that they've invented native XML management in their database engine, and that is not the case. We first shipped native XML storage in management with the DB2 XML Extender, which became available at no charge in late 1999. That XML Extender was then folded into DB2 7.2," he said, adding that IBM has created more than 100 extensions to SQL to incorporate XML functionality.

What's new in version 8.1, Jones said, are two new XML-related SQL extensions: one for automatic schema validation, and

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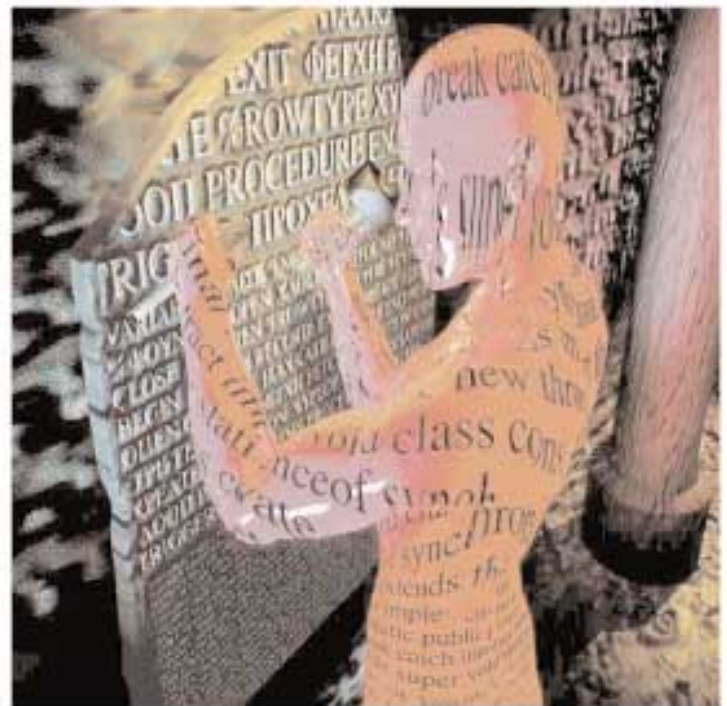
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DATABASES

◀ continued from page 10

one to apply XSLT style transformations appropriately for the ultimate target device. But, Jones admitted that 8.1 doesn't have full XQuery support. "We're still working on that."

With Web services, said Jones, version 7.2 exposed database objects as Web services through the WebSphere application server but was not able to consume Web services. "We complete the puzzle with version 8," he said. "DB2 can get data from a SOAP-compliant Web service as if it were an SQL-compliant database."

The database offers new scalability, said Jones, through a feature he called multidimensional clustering. "It's not about clustered networks of servers or OLAP," he explained. "This is the idea that data that is related, in the sense that an application will want to get at all these pieces of data at the same time, ought to be painted closely together on the disk storage device, so that minimal jumping around on the disk should be required for common types of queries." The multidimensional aspect comes in because clusters take into account many different ways that data might be viewed, he added.

Another enhanced performance feature, called Materialized Query Tables, is designed to speed queries that join multi-

ple tables across several servers on the LAN by caching the answer set on a single server, and by automatically updating that cache when data changes in any of the servers. "We push way beyond our competition," he claimed, "because any type of federated data can be a candidate for these types of joins. This includes Oracle tables, SQL Server, Sybase, flat files, message queues, Web services...it's a very heterogeneous world of data that can be used in this join-speed-up capability." The idea of these types of query tables isn't new—Oracle has a similar feature, Jones said—but nobody else can aggregate all of these data sources, he claimed.

Finally, DB2 (www.ibm.com/db2) is now 64-bit capable on Linux and Windows using Intel's Itanium 2 processor. "That's the last platform for 64-bit for us; we've been 64-bit-ready on Unix, mainframes and AS/400," said Jones.

SQL SERVER DIRECTIONS

Microsoft has provided some recent updates to its SQL Server database; as reported in the July 15 issue ("SQL Server Gets New Class of Notifications," page 1), it is now offering its Notification



DB2 can now consume Web services, says IBM's Jones.

Services add-in, and in July released version 1.1 of its SQL Server Accelerator for Business Intelligence. The update enhances code auto-generation and has resulted in performance improvements, according to the company (www.microsoft.com/solutions/bi). In addition, Microsoft is shipping a new service pack for its SQLXML 3.0 add-in for SQL Server 2000, which provides Web services support by turning stored procedures into XML-based Web services. Also, the company in September is starting a beta program for the 64-bit version of SQL Server 2000.

Sheryl Tullis, a product manager for SQL Server, said Yukon, the code name for the next version of the database, is expected to begin a second, public beta phase later this year, with general availability at the end of 2003. Yukon will be available in both 32-bit and 64-bit versions.

"[Yukon] is the first implementation of Microsoft's vision for unified data," she said. "You don't have to know where all your data is stored: it could be in your file system, in your database, e-mail, in a picture; we're trying to bring that all together in a transparent way, so you can get the information you need when you need it."

That's different from Oracle's Internet File System, she said, as "Oracle wants you to put everything into the database. We don't think that people want to put

everything into the database. The better way is to make everything transparent."

On the business intelligence front, Tullis said, "one reason we've done so well is that we've integrated that early on into the database; now IBM and Oracle are talking about doing that. That's enabled us to optimize BI for performance, so we can return queries a lot faster, we can search a lot better," she claimed. "We're going to be adding new functionality in data warehousing, OLAP extensions and data mining algorithms."

Tullis said Yukon will support XQuery. "We feel that there will be a mix [of XQuery and SQL], because there's structured data, unstructured data and relational data. People aren't going to turn to pure XML databases, because they need a way to make those relational connections. It's so much faster to query a relational data than unstructured data in a hierarchical format."

But perhaps the biggest change is that Microsoft's .NET Framework and Common Language Runtime, or CLR, will be embedded into SQL Server itself. "It will have a big impact on how you develop with the data. That's what makes [Yukon] .NET. Now you can program the database in any language," said Tullis, adding that the company will be releasing a special version of Visual Studio .NET that's optimized specifically for developing applications running on Yukon. ■

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VS Live Adds ASP Conference

BY CHRISTINA M. PURPI

This fall's VS Live will feature a new conference within the conference—ASP Live. The conference, produced by Fawcette Technical Publications in Orlando, Fla., also changed its recurring C++ Live "show within a show" to C# Live for those who focus on Microsoft's new programming language. ASP Live offers courses such as "Build Transactional ASP.NET Pages and Web Services" to accelerate development using ASP.NET.

Scheduled to take place from Sept.

14–19, the show also features a new track focusing on .NET and mobility, including sessions and workshops such as "Building Mobile Enterprise Applications with Microsoft .NET Compact Framework" and "Microsoft ASP.NET: Tips and Tricks for Mobile Web Applications." More than 100 new classes will be offered, and on Monday an announcement will be made regarding the .NET Compact Framework, details of which have yet to be disclosed. Pre- and post-conference workshops will be held on Saturday, Sunday and Thursday. ■

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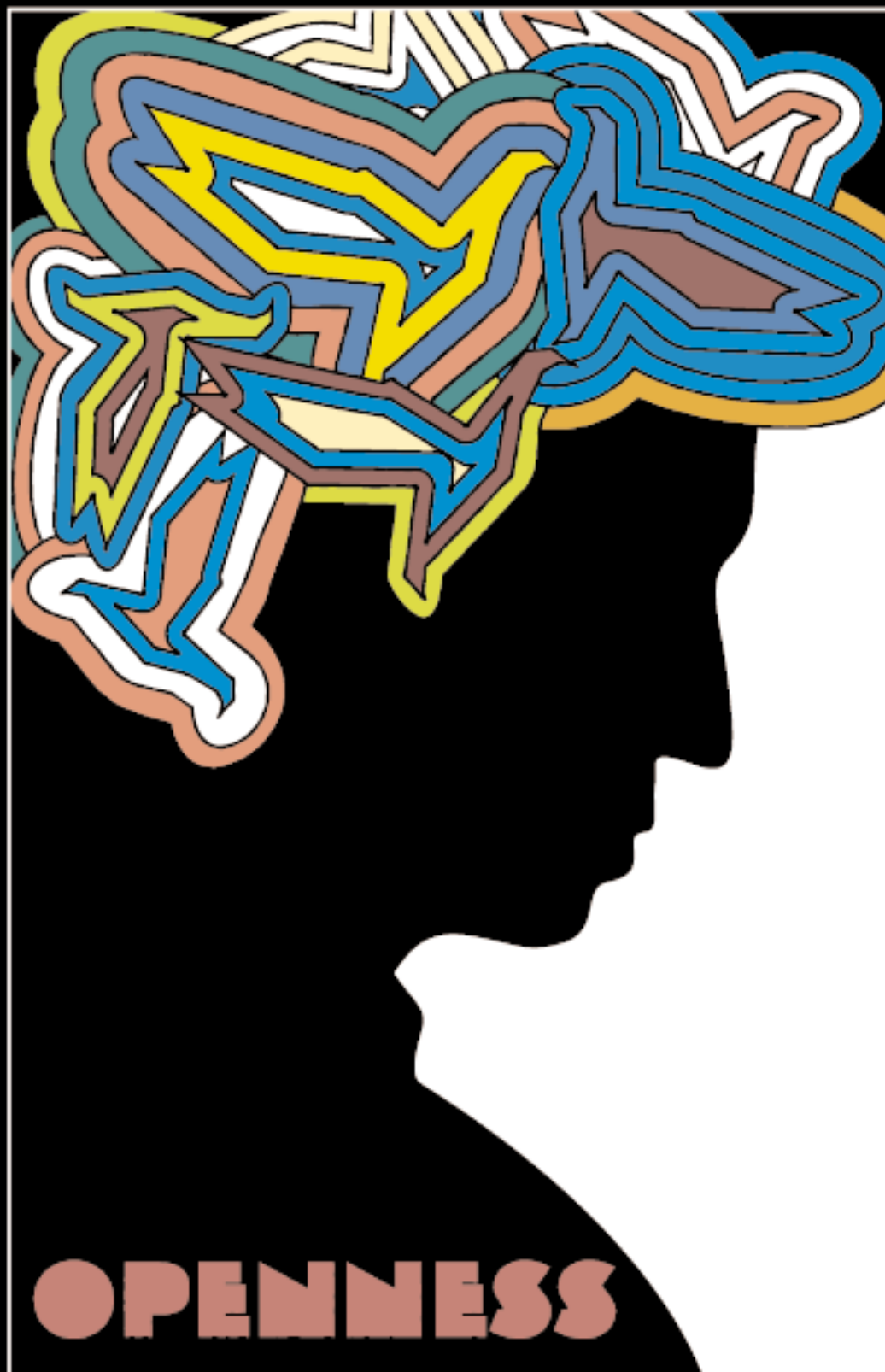
CONFERENCE HOURS:
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Tuesday, 9 a.m.–6:30 p.m.
Wednesday, 9 a.m.–5:30 p.m.

EXHIBIT HOURS:
Monday, 12:30 p.m.–4 p.m.
Tuesday, 12:30 p.m.–3 p.m., 6:30 p.m.–8 p.m.
Wednesday, 12:30 p.m.–3 p.m.

KEYNOTES:
Monday, 9 a.m., "Microsoft .NET and Mobility," Oshoma Momoh, product unit manager, Microsoft Corp.
Tuesday, 9 a.m., "Evolution of Data Access: Is XML the Endgame?" Dave Reed, general manager of XML and data technologies, Microsoft Corp.
Wednesday, 9 a.m., Panel: "Best Approach to Software Management: A Discussion," Alan Cooper, Cooper; Ron Jeffries, XProgramming.com; Grady Booch, Rational Software Corp.

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Macromedia's Sitespring Winds Down

Web production collaboration tool scrapped in favor of MX development

BY DAVID RUBINSTEIN

Only one year after rolling it out, Macromedia Inc. has pulled the plug on Sitespring,

its Web site collaboration and management tool.

Sitespring was meant to be a way to bring Web develop-

ment team members with differing skills together during the design and production stage. But the company has shifted

its focus to its MX initiatives and has stopped work on Sitespring, according to the company Web site (www.macromedia.com/software/sitespring).

Macromedia executives declined requests from SD Times to comment on Sitespring's status, but the Web site reads: "Economic and technology shifts have changed the management of Web production processes since we first developed Sitespring.... We've decided to stop enhancing Sitespring in order to focus on the Macromedia MX vision of an integrated family of client, tool and server technologies for building rich Internet applications."

Macromedia will continue to support Sitespring until May 2004, or until individual contracts expire. Only existing customers will be able to purchase Sitespring servers and add-on user licenses. There are no specific migration paths to MX products. ■

UML 2.0

← continued from page 1

issue of interoperability between CORBA and Web services, he said.

"WSDL doesn't address collaboration" of Web services, Waskiewicz said. "There is a [Request For Proposal] seeking to tie the semantics of ECA [Enterprise Collaboration Architecture] into Web services. ECA, he explained, is a business-process modeling framework that describes how to design the relationships between such things as CORBA objects and Web services; the standard will allow those models to be implemented in Web services. "We still argue CORBA's the way to go in distributed object computing," he added. "But there are other choices out there that we need to accommodate."

At a late June meeting in Orlando, OMG's board of directors approved a CORBA Firewall Traversal standard and a revision to CORBA that allows IIOP to work with Ipv6. "That was a long time coming," Waskiewicz said, "because the commitment to implementation [among vendors] was slow."

Work also has begun on enhancing the performance of CORBA in embedded and other highly specialized systems, he said. ■

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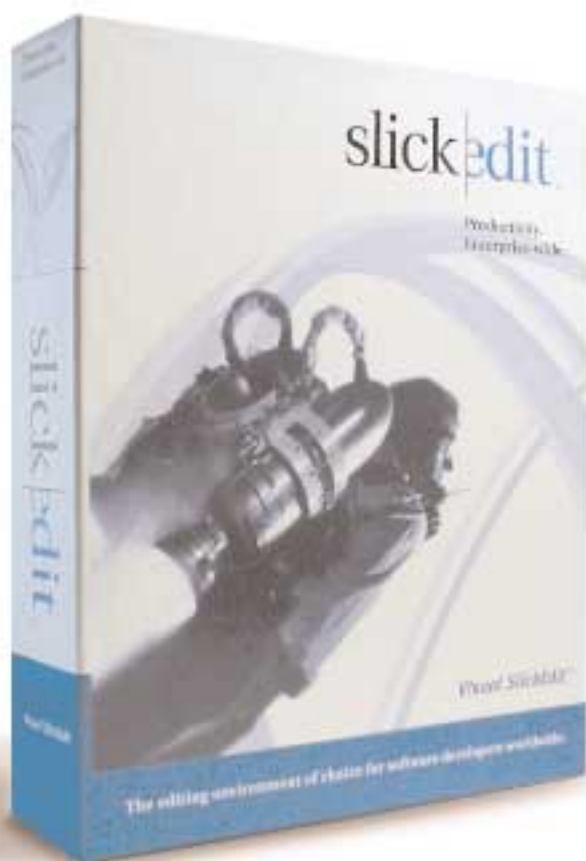
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ALAN ZEICHICK: Conference Chair

Alan Zeichick, co-founder and editor-in-chief of *SD Times* and a columnist for *Red Herring*, began his career as a mainframe systems analyst and developer. Since 1984, he has written nearly 2,000 articles for dozens of technical and industry publications, and is in frequent demand as a speaker at such events as Comdex, NetWorld + Interop, PC Expo, Software Development Conference, IBM Technical Interchange, and JavaOne.



LARRY O'BRIEN

Larry O'Brien, founding editor of *Software Development Magazine*, has been described by software engineering legend Larry Constantine as "the best technical manager I've ever met." The well-read author of hands-on articles on leading-edge technologies, O'Brien recently served as lead architect for a series of J2EE-based Web services projects, and used the .NET Framework as the basis of his latest patent application. A popular instructor at development conferences, his latest book is "Thinking in C#."



ANDREW BINSTOCK

Andrew Binstock, principal analyst at Pacific Data Works, is an expert on technologies ranging from Web services to middleware to programming languages. Today, he works with corporate clients and contributes *SD Times'* *Middleware Watch* column; previously, he served as a senior technology analyst at PricewaterhouseCoopers, as editor of *UNIX Review*, and as founder of *The C Gazette*. His best-selling "Practical Algorithms for Programmers" is currently in its 12th printing.

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3:00-4:30: Building and Deploying
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Wednesday, October 2

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11:15-12:30: Enterprise Integration
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1:30-2:45: Tools and Frameworks for
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MORE PRODUCTS

◀ continued from page 4

based on the IMSL libraries, and date and time support for time-sensitive analysis. JMSL 2.0 is priced at \$4,995 per developer . . . Axiomatic Software Design Inc. has released **Acclaro Scheduler** for Rational's Rose UML modeling suite. The scheduler helps developers to assess the impact and scope of design changes, estimate the development time required to implement those changes, and generate coding and testing work plans. The tool is priced at \$895 per developer seat . . . Green Hills Software Inc. has released a new **PowerPC compiler** for Ada, C/C++ and EC++. The compiler, which runs inside Green Hills' Multi 2000 IDE, is priced at \$5,900 per developer seat . . . Versant Corp. has released a preview version of a **Java Data Objects (JDO)** extension for its **enJin** object database. The company has implemented a superset of JDO based on its own APIs called Java Versant Interface . . . BEA Systems Inc. has added support for Java API for XML-based Remote Procedure Call (JAX-RPC) in its **WebLogic Application Server** . . . **Chart FX for .NET**, a new charting component from Software FX Inc., works natively with XML-based Web services, and can output graphics in multiple formats, including GIF, JPEG, PNG and SVG. Charts can be populated through ADO.NET links. A version of the component that supports Windows Forms, Web Forms, ASP.NET and unlimited deployment costs \$2,699; for Windows Forms only, the price is \$899 . . . Rogue Wave Software Inc. has released a beta of its **Project Ratchet**, which generated C++ components that represent XML documents. Ratchet includes a schema compiler and a runtime binding framework, and runs on Linux, HP-UX, Solaris and Windows.

PEOPLE

Erika Williams has been hired as president and CEO of Atesto Technologies Inc., which sells performance-testing tools. Previously, Williams was interim CEO of Object Reservoir; before that, she was president and CEO of Force Computers Inc. . . . MKS Inc. has hired



Michael Harris as its new COO, reporting to CEO **Philip Deck**. Previously, Harris was CEO of the Interealty division of Geac Computer Corp., a supplier of software to the real-estate industry . . . **Gregory Coticchia** is the new CEO of

HARRIS LogicLibrary Inc., which develops and sells software asset management tools. Most recently, Coticchia was VP of sales and marketing at Intraware Inc., which sells software delivery systems . . . Interwoven, which sells enterprise content management software, has promoted **John Van Siclen** to CEO; he will continue to serve in his previous roles as president and COO. **Martin Brauns**, the previous CEO, will continue as chairman of the board . . . **Howard Lewis**, president and COO of SlickEdit Inc., has returned to retirement after revamping the company's management team. Lewis will remain on the board of directors; a replacement has not yet been named.

STANDARDS

The Web3D Consortium released **X3D SDK**, a specification for delivering high-resolution 3D graphics via streaming media. The specification, endorsed by the ISO/IEC, implicitly establishes a world coordinate space for all objects defined, as well as all objects included by the application; explicitly defines and composes a set of 3D and multimedia objects; can specify hyperlinks to other files and applications; can define object behaviors; and can connect to external modules or applications via programming and scripting languages . . . Sun Microsystems Inc.'s Java Community Process has released community review draft specifications for **JSR-31 XML Data Binding**, **JSR-169 JDBC Optional Package for CDC/Foundation Profile**, and **JSR-171 Java Community Process Program version 2.5**. The JCP also has public review drafts of **JSR-152 JavaServer Pages version 2.0** and **JSR-99 Java Specification Participation Agreement**, as well as a proposed final draft of **JSR-112 J2EE Connector Architecture version 1.5** . . . The World Wide Web Consortium has released **Exclusive XML Canonicalization** as an official recommendation; **XML-Signature XPath Filter** is a candidate recommendation. ■

TWO VOICES

◀ continued from page 1

need to add voice to applications, the most pressing of which is for the replacement of proprietary interactive voice response systems (IVRs). "People are tired of proprietary tools and standards; they want open tools and standards and a unified way of implementing an IVR," he said. Microsoft is a founding member of the SALT Forum (www.saltforum.org).

Masten said that in the enterprise, call centers are using the Internet to enhance or supplement services, and have evolved into what he called contact centers. "Traditional call centers would have thousands

of agents taking every call, with each call being telephone-only. Now they include e-mail, Web chats, voice

over IP and other types of Web-based interactions to create a more satisfying customer experience. Speech-enabling those kinds of interactions would make them more pleasant and useful," and would allow companies to eliminate the overhead involved in maintaining separate voice and visual systems, he said.

IBM also is committed to voice enablement but is taking a different tack. The company is working on a toolkit for its WebSphere Studio that it says will enable developers to use XHTML and VoiceXML (X+V) to create multimodal applications for WebSphere, which would combine voice input and/or output capabilities with visual interfaces. The company also said it will extend the tools to WebSphere Everyplace, its environment for allowing access to back-end WebSphere applications from mobile devices.

Sunil Soares, IBM's director of pervasive computing, said that multimodal capabilities are most useful for form-filling applications or those that return long lists of information from a few spoken words, such as a list of available flights after speaking an origin and destination. Another example is while in the car. "If I'm on a freeway and want to know what the traffic patterns are ahead, I can call a voice portal and [speak]

information about my location and get directions sent to my handheld visually [because] I can't parse them fast enough. That's the power of multimodal applications."

Masten, who also is chairman of the SALT marketing working group, said voice enablement of the Web also can help cater to resource-constrained devices. "When you have a handheld [computer] or cell phone with a GUI screen, that's when you get into the need for speech.

In the enterprise, if I was on an assembly floor with a PDA, it's going to be easier to speak a part number for an inventory check than to click on a soft keypad with my stylus. Also, if you're blind or otherwise disabled and you can't use a keyboard but can speak, you still will have access to Web-based applications."



According to IBM's Soares, 'SALT has some growing up to do.'

Soares defended IBM's embrace of X+V rather than joining SALT, a consortium representing dozens of companies. "We believe that SALT has some growing up to do. It's immature and not proven in the voice space. XML is a declarative language, so it's easier to write. XHTML is the new way to write Web applications, and VoiceXML

is the established way to write voice applications. Both have been out there a while, so there's an existing base of developers."

Michael Sajor, vice president of business development at Kirusa Inc. (www.kirusa.com), which markets development tools for both SALT and X+V, said there's room for both. "Our point of view is that SALT provides a convenient way for developers that are comfortable with Web application development to start entering the multimodal space. It's not that it has radically improved over other ways of doing it; it's just different and perhaps more comfortable for some. From an end-user perspective, you wouldn't be able to tell if [an app had been built] with X+V or SALT."

But Soares claimed that developers need to write "a fair amount of JavaScript" to build a SALT application that is equivalent to one built with X+V. "Developers don't really want to write JavaScript," he asserted. "It comes down to programming efficiency and performance. If you can write your application using declarative logic as opposed to JavaScript, it makes it [easier] to debug."

"You could also make the argument that the X+V approach forces you to do much more with the grammars in VoiceXML," countered Sajor. "I don't think the industry is far enough along to make that call. I think they're each going to have their role. What I'm more interested in seeing is what the end view will be after negotiating with the W3C. I'm more interested in driving their convergence and seeing some middle ground."

Soares went on to claim that X+V ensures portability. "We allow you to write the app once and deploy it in voice-only, multimodal or visual environments. I do not believe that is the approach that SALT takes."

"The whole premise of SALT is to add speech to existing applications," answered Masten. "You'll have one XML or HTML app that can then be hit by surfing PCs, phone with speech-in/speech-out interaction, or you can hit it with a multimodal handheld device with mixed visual and speech interaction."

In IBM's initial X+V release due this fall, voice processing will take place on the client device using an embedded version of IBM's ViaVoice runtime engine with a 500-word vocabulary, according to Soares. He added that Compaq's iPAQ will be the only supported handheld computer. No timeline was given for delivery of a planned server-based speech engine.

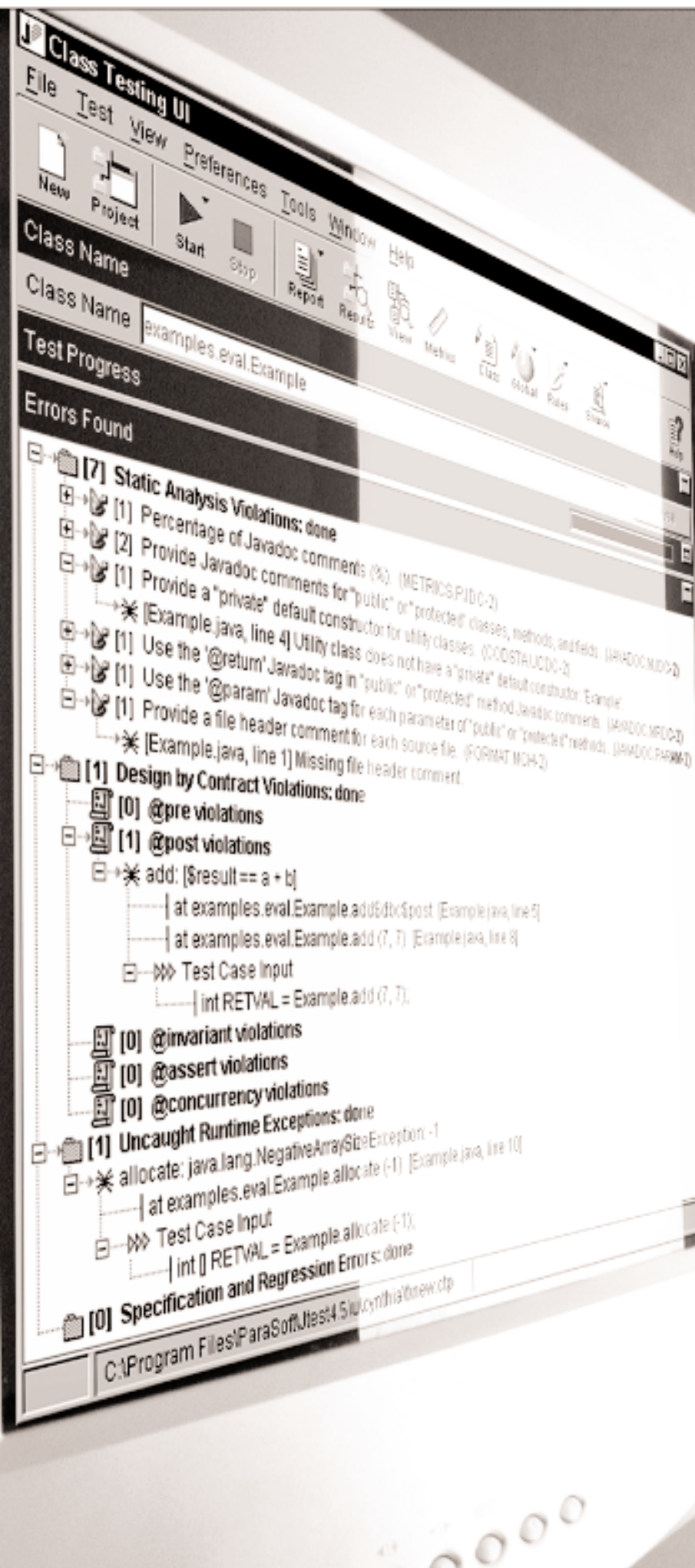
Microsoft's SALT-compliant SDK went to beta this month, and Masten said he expects Microsoft's .NET Speech Server to enter beta by mid-2003. Kirusa is currently demonstrating a SALT-compliant multimodal application on Bouygues Telecom's GPRS network in France using SpeechWorks voice recognition software. No launch date was given. ■



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(1) JUnit is a regression testing framework written by Erich Gamma and Mark Beck. JUnit is Open Source Software, released under the IBM's Common Public License Version 1.0 and hosted on SourceForge.

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TI Opens Its Arms to Embrace Developers

Releases OMAP 5910 multicore DSP, broadens availability of bridge tools

BY EDWARD J. CORREIA

While it might be music to OEM ears that chip maker Texas Instruments Inc. this month released the OMAP 5910, its latest low-power multicore DSP, a broadening of the chip's availability and of the tools used to target it should also be welcome news to enterprise developers, according to the company.

The 5910 combines an ARM 925 32-bit RISC core with TI's C55x DSP and a number of system-on-chip peripherals, including USB 1.1 host and client, buffered serial ports, an LCD interface and 192KB of RAM. It is intended for use in handheld computers, kiosks, medical imaging and anywhere that digital signal processing takes place.

According to Gregory Mar, TI's worldwide manager of marketing for DSPs, enterprise developers now building ARM-based devices can for the first time use OMAP

tools to transparently target TI's new DSP without the special skills normally associated with programming digital processors. What makes this possible, he said, is DSP/BIOS Bridge, an add-on to TI's Code Composer Studio IDE that permits developers to use existing ARM APIs to target the DSP.

Mar explained that the software works by implementing API calls from supported ARM-based operating systems onto a bridge library and reporting where the code will execute most efficiently, on the RISC processor or the DSP. "It abstracts the DSP from the user and makes it available as ARM APIs," making DSP development nearly transparent, he claimed, while leaving the developer in charge of determining where the code will ultimately execute. The software currently supports Linux, Nucleus, VxWorks and Windows CE .NET.



The DSP appears as ARM APIs, says TI's Mar.

Gene Frantz, a principal fellow with TI's DSP division, said the bridge capability has long been a part of TI's offerings. "Our OEM customers—Nokia, Sony, Ericsson and Palm—will say there's nothing new here. But to others, this is big news [because] the broad market has heard about the concept but has, up to now, not been able to take advantage of the capability," he said.

Frantz claimed that the new circuit consumes about half as much power as a 300MHz XScale, an ARM-based design from Intel that lacks a DSP. "What we're seeing is a new measure in performance: power usage," said Frantz, adding that it is fair to compare these two chips "because of [similar] processing capabilities," and that the presence of multiple processors on-chip along with system peripherals consumes less power than if implemented separately.

The company also has released the Innovator Develop-



The chip combines an ARM RISC core with TI's DSP.

ment Kit (www.ti.com/sc/rd/innovator), a set of hardware and software tools designed to simplify development of handheld and wireless applications using its processors. For \$1,995, the basic kit includes a palm-sized handheld computer with OMAP 1510 processor, 16MB RAM and Flash, a

touch-sensitive color LCD display, stereo speakers and I/O, and interfaces for USB, IrDA and RS-232.

A \$3,995 deluxe kit will add a breakout board for the handheld unit that adds optional ports, Ethernet and PS/2 ports, a keyboard and mouse, plus a battery and charger. Optional expansion modules will be available for GSM/GPRS, 802.11b and Bluetooth. Both kits include the appropriate board support package, a copy of the Code Composer Studio IDE, and a choice between Windows CE .NET or optimized versions of Linux, Nucleus or VxWorks. The kits were scheduled to begin shipping in mid-August. ■

Microsoft Adds IPv6 To Windows CE .NET

BY ALAN ZEICHICK

Windows CE .NET, Microsoft Corp.'s operating system for embedded devices and handheld computers, received a minor update in late July, with the addition of IPv6 to its protocol stack, as well as a number of file viewers and other APIs.

According to Microsoft, Windows CE .NET version 4.1 now uses the sixth release of the Internet Protocol, which increases the address space from 32 to 128 bits. IPv6 also includes built-in quality-of-service features that allow network administrators or developers to flag the priority of packets for latency- or jitter-sensitive applications. This could be beneficial for Voice over IP applications, as well as other streaming media apps.

For developers working on handheld devices, or those with consumer-facing user interfaces, Windows CE .NET now includes native file viewers,

including a first-ever view for Adobe's Portable Document Format, the basis of the Acrobat system. There are also viewers for Microsoft's Office applications and such common graphics formats as GIF, BMP and JPEG.

Also new for this release, the company says, is the inclusion of Microsoft's Speech API (SAPI) version 5.

Microsoft claims that the performance of various parts of the Windows CE .NET applica-

tion stack has been improved since the initial release earlier this year, and that Internet Explorer is now 60 percent faster than the version shipped with Windows CE 3.0, and Windows Media plays back 20 percent faster.

The company also claims some improvements to Platform Builder, its tool for creating Windows CE applications on a standard Windows development system. According to Microsoft, these include a more robust device emulator on Platform Builder that's able to emulate inbound network connection, and a better source-code browser.

The new update is available immediately. ■

Quality in Quantity: A Week of Learning

BY CHRISTINA M. PURPI

Topics such as Internet reliability, outsourcing QA projects, and requirements and change impact testing are among the many sessions offered at Software Quality Week, to be held Sept. 3-6 in San Francisco.

The 20th in the series of Quality Week conferences is divided into five tracks: Technology, Applications, Internet, Process and QuickStart. Pre- and post-conference workshops and tutorials will be held on Tuesday and Friday, concentrating on Web testing and test automation.

Produced by the Software Research Institute, a not-for-profit subsidiary of Software Research Inc., the conference will play host to more than 35 exhibitors. Among the keynote speakers scheduled are "Internet Reliability Under Stress" and "The Human Side of Risk." ■

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CONFERENCE:

Sept. 3-6
San Francisco Marriott, San Francisco

CONFERENCE HOURS:

Tuesday, 8:30 a.m.-7 p.m.
Wednesday, 8:30 a.m.-6:30 p.m.
Thursday, 8:30 a.m.-5 p.m.
Friday, 8:30 a.m.-5 p.m.

EXHIBIT HOURS:

Tuesday, 5:30 p.m.-7:30 p.m.
Wednesday, 10 a.m.-6 p.m.
Thursday, 10 a.m.-3:30 p.m.

KEYNOTES:

Wednesday, 8:30 a.m.-10 a.m.
"Internet Reliability Under Stress," Fred Baker, Cisco Systems Inc.
"The Human Side of Risk," Erik Simmons, Intel Corp.

Thursday, 8:30 a.m.-10 a.m.
"Science, Computer 'Science,' Mathematics, and Software Development," Dick Hamlet, Portland State University

"Achieving Very High Reliability for Ubiquitous Information Technology," Robert Binder, Mobile Systems Verification

www.soft.com/QualWeek/QW2002

PHAOS SUPPLIES ENCRYPTION WITH LIBERTY SDK

BY EDWARD J. CORREIA

Just weeks after the publication of Liberty 1.0, a specification intended to unify how security and user authentication are carried out across disparate Web sites, Phaos Technology Corp. has released the Liberty SDK, an implementation that provides the encryption called for

in the specification released in late July.

Darren Calman, vice president of business development at Phaos (www.phaos.com), claimed that Liberty will be an essential element in the successful implementation of smooth business-to-business transactions. "Liberty is important for

Web services to take off. For affiliated companies to hand people off from an airline to a car rental agency, let's say, it permits a seamless end-user experience."

Phaos' SDK, available now at \$5,000 per developer seat plus \$3,000 per server processor for deployment, provides secure handle-passing via SSL

3.0 or TLS 1.0 and message security through an XML signature, and supports SAML identity assertions. "The people that are writing [B-to-B] applications want to know that everything is secure. They don't want their customer data being compromised as it's being handed off from Delta to Hertz."

The Liberty Alliance Project (www.projectliberty.org) is led by Sun Microsystems Inc. ■

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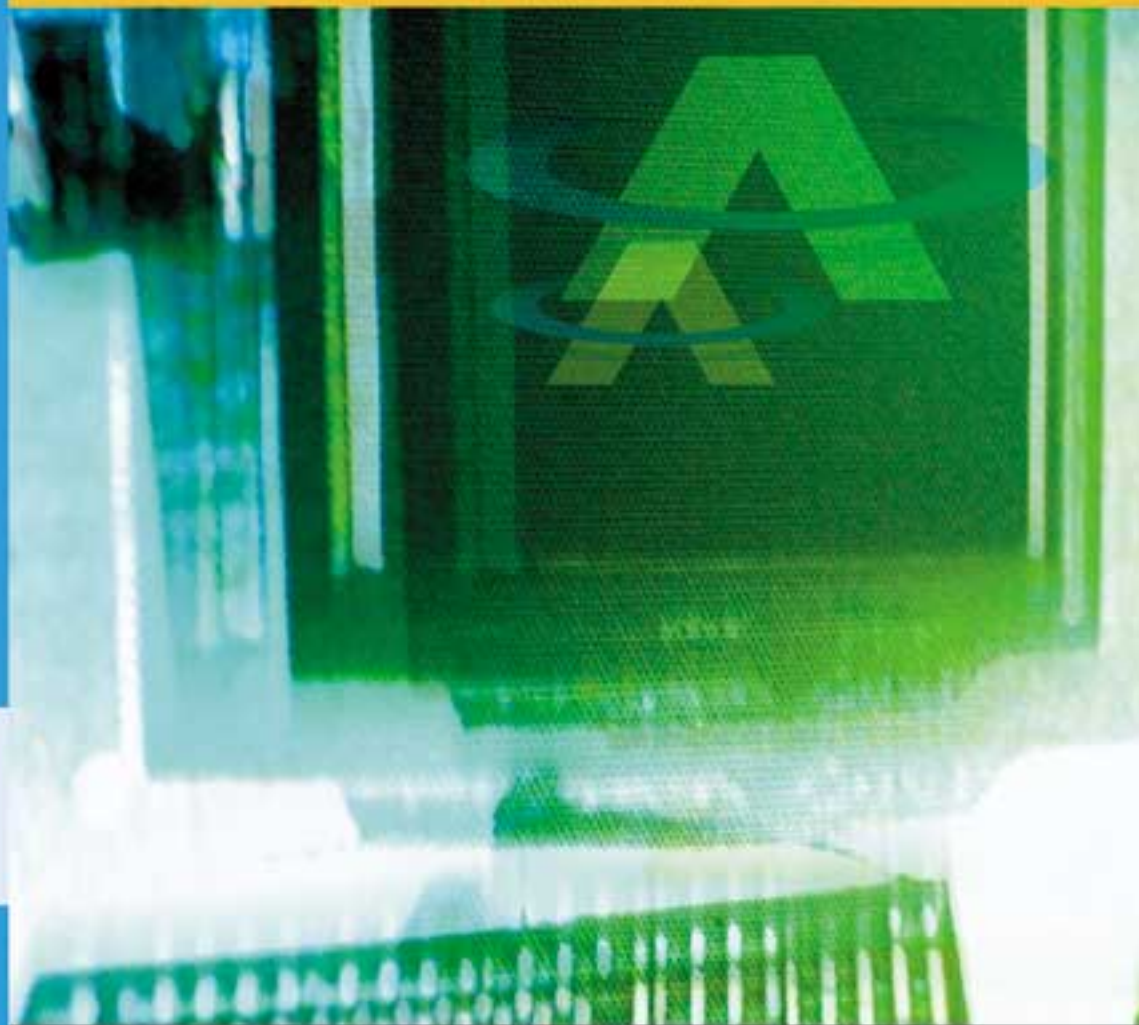
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Developers Indifferent to eCos Ownership

BY EDWARD J. CORREIA

Red Hat Inc.'s apparent dropping of the eCos operating system will not affect developers' plans to continue using the RTOS, since the company says its next version will be licensed under a less restrictive agreement and that good support is available elsewhere.

Beginning with version 2, which went into alpha testing in May, eCos will be licensed under a modified version of GNU Project's General Public License, rather than the more restrictive Red Hat eCos Public License (RHEPL). "With eCos 2 being [available under] GPL, Red Hat really isn't in control anymore," said Tim Drury, chief engineer at Silicon Motorsports, a start-up developing hardware and software systems for street and racing cars.

Drury added that Red Hat's ownership of the operating system, which it acquired with Cygnus Solutions in early 2000, has never really played a significant part in his company's development process. "We don't get support from Red Hat. The mailing list is all the support we've ever needed," he said, referring to Red Hat's discussion site (<http://sources.redhat.com/ecos/intouch.html>).

Red Hat COO Tim Buckley last month indicated that the company would continue to develop eCos only for significant customers. Claiming to be shut out by that position was Michael J. Kelly, vice president of engineering and marketing at single-board computer maker Cogent Computer Systems Inc. (www.cogcomp.com), which recently attempted to gain access to support for eCos from Red Hat. Kelly characterized Red Hat's response to his request for a price quote as poor, and left him with the impression that the company "only wants high-ticket customers."

According to Kelly, Red Hat's recent moves have affirmed what he has long believed to be a soft position by the company on supporting eCos. "I felt they had little commitment to eCos when they picked it up with Cygnus. Now my suspicions are confirmed." Further, Kelly believes the burden of responsibility falls on Red Hat CTO Michael Tiemann, who spent 10 years with Cygnus, and was eventually its

president. "It was under his leadership at Cygnus that eCos came into being. Now he says it isn't important, and repeats the company line on dropping eCos." Tiemann was recently quoted on

CNet as saying, "Our strategy is to expand the scope of Linux to encompass the embedded space." Tiemann did not respond to requests for comment.

All the developers contacted

have said they would continue to use eCos. "I don't think Red Hat backing or not backing eCos diminishes the quality of the software," said independent developer Anthony Massa. "I

have used numerous RTOSes before and have never found the embedded development system that eCos offers, and at that price." eCos and its tools are free.

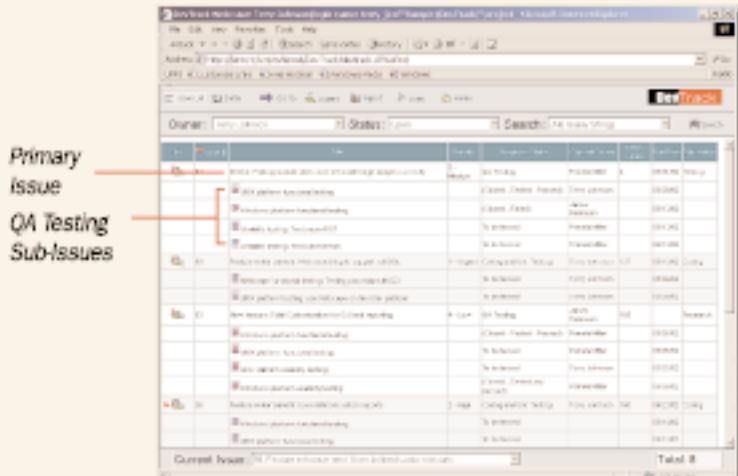
Also new in eCos 2 will be a FreeBSD-based TCP/IP stack that supports IPv6 and JFFS2 and DNS support. ■

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Stalking the Wild Software Defect

QA tools are a vehicle for communication in development teams

BY ESTHER SCHINDLER

Some development managers release impressive software armed with only a spreadsheet, a pile of Post-it notes and a confident attitude. Others, equipped with every QA tool imaginable, have never met a deadline. Clearly, bug-stomping success isn't the result of tool quality, but of your ability to get the most out of the tools available.

According to successful bug hunters, the key to effectively using QA tools (by which we mean anything in the configuration management pantheon, from bug-tracking databases to version management to source-code control) is to view the system as something more than software. "Like e-mail, defect-tracking systems are inherently a vehicle for carrying on a conversation that's disjointed in location and time," explained Elton Hay, a consultant who specializes in QA tools. "[The] ability to facilitate is one of [their] main functions." Ideally, QA tools enable team members to communicate about a project's status, control the process a bug goes through, avoid redundant work, and engage the development staff in taking ownership of the code.

Bug-tracking applications control what happens to any bug entered into the system. That process, at best, can reflect only the efficiency of your organization's workflow. "The software enables us to implement the QA process we have in place," said Mike Cooper, QA manager at financial consulting company Revenue Technologies Corp., which uses Seapine Software Inc.'s TestTrack. "You have to know that before you can do anything else."

So, the first step is to determine that workflow. "What is the current development process? Is it documented? Is it followed? Is it followed consistently throughout the entire organization?" asked Mark Griffith, senior consultant at Merant International Ltd. The more "yes" answers provided, the easier it will be to deploy and use the chosen QA tools. "Draw a physical flowchart or workflow diagram," advised Cooper.



As part of the workflow process, consider which staff members need to see which items, who supervises the process, who assigns bugs to be fixed. "Defining the flow of work through the software is probably the most important part of using it," said Jay Varner, director of programming at Data Information Management Systems, which makes election management software and relies on Red Gate Software Ltd.'s tools.

When defining workflow, take a wide view. That's the lesson learned by Pam Pullem, director of IT projects at mortgage insurance firm PMI Group Inc., when the initial scope of the com-

pany's software expanded. The QA team had implemented its Sesame ExtraView application to reflect its own hierarchies, but those categories and workflow settings didn't serve the needs of the production support department. While ExtraView permits Pullem to make the changes necessary, she said she wishes she'd started out with a broader perspective.

Bug-tracking tools can do two things, Griffith said. They can implement, enforce and control your current development process (and that alone should improve your time-to-market). Plus, the software can be part of a

drive toward process improvement. But trying to do both at once can cause huge growing pains, developer resistance to change, and confusion about the team's goals.

A manager may find that changes to the company's process are necessary to use the tool. That could improve the development team's ability to deliver, but wholesale, across-the-board changes to process should be avoided.

On the other hand, managers need to be ready to take advantage of the QA tools when changes to the operation are required. Adam Kolawa, CEO of code management tool vendor Parasoft Inc., has a firm policy that the software enforces: You can't check in code that won't compile. Jim Beveridge, president of software vendor Connected Software Inc., has two main rules for ensuring code quality: First, "programmers fix their own bugs. Period. This makes sure that your good people aren't penalized for being good by being forced to fix other people's bugs." And second, "programmers don't get to move on to a new feature until QA says they are done with the previous feature. This makes sure that your poor programmers don't constantly have the pleasure of working on new features while everyone around them fixes their bugs." These two steps, he said, force a continual QA process instead of a "test it at the end" mentality.

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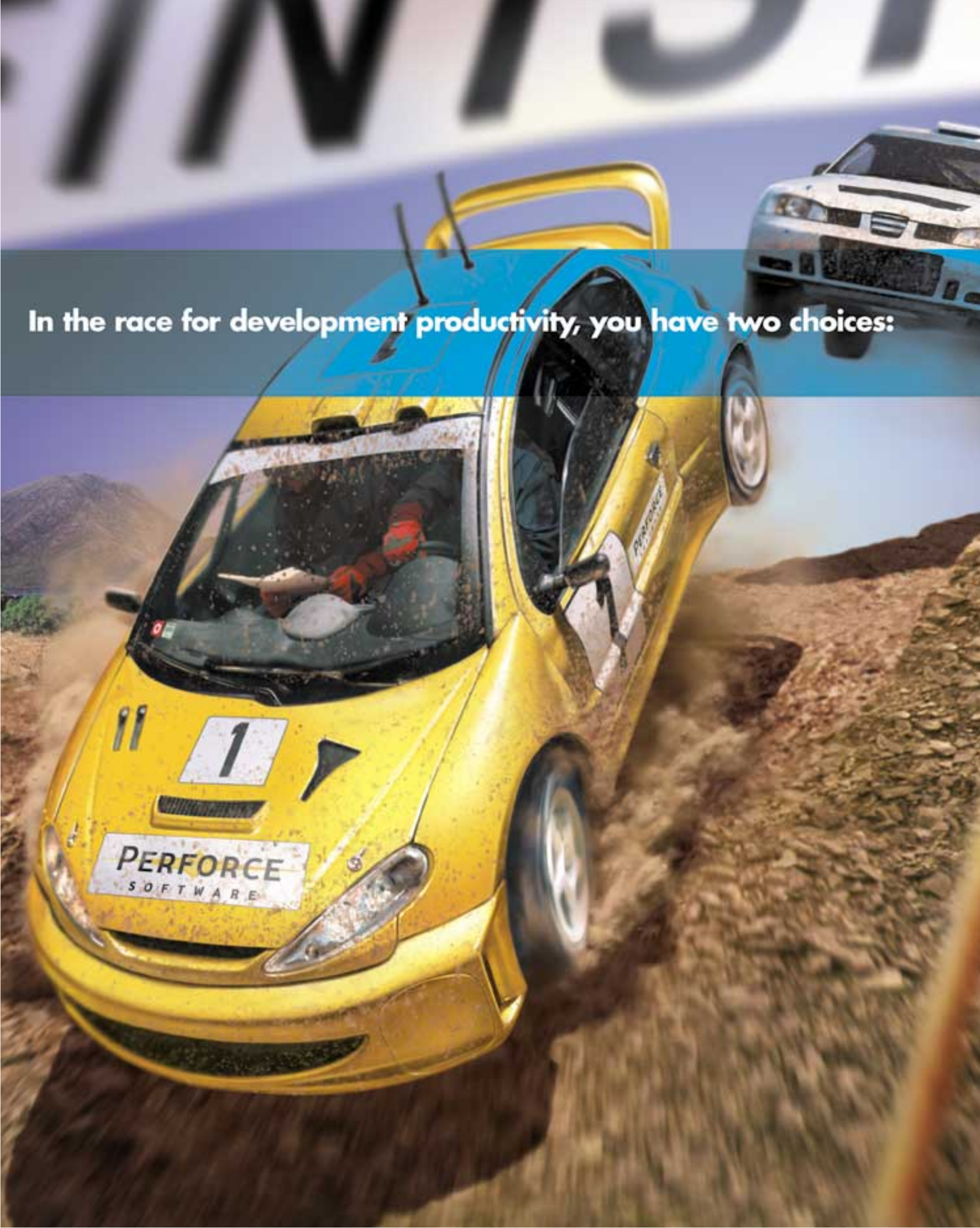
Start small. Don't think about integrating with other tools initially. Keep it simple. QA managers said repeatedly to get the basics working smoothly before tackling complexities. And even then, they said, stay conservative.

"Just because our software lets you create customer fields doesn't mean you *have* to use them," advised Neil Davidson, technical director at Red Gate. The greater the number of arbitrary fields, he said, the more likely users will be to leave them blank, or to enter junk data. Not only is wrong

► continued on page 30

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STALKING DEFECTS

◀ continued from page 27

information worse than none, but the increased complexity becomes a barrier to the developers and testers who need to use the system—and that's what this whole exercise is about, he said. "Designers

readily adopt and demand tools which improve their productivity," said Art Pina, a longtime software developer and CAD engineer. "If we perceive the gain to the project will outweigh our personal inconvenience, we'll accept it."

Take time for training. While budgets are tight, and

QA tools typically get less respect (and thus money) than they deserve, realize that the tool's value will reflect the common understanding of its users. Revenue Technologies' Cooper has quarterly review sessions in which he sets guidelines for, say, what constitutes a high-priority bug.

Conduct a design review for the bug-tracking system, suggested Jesse Keller, senior software engineer at ISE Research, to ensure that the system reflects reality without overburdening users with irrelevant data. That sanity check can teach you plenty of simple usability lessons. One example:

Show items in the order they'll be encountered, rather than alphabetical.


Merant's Griffith recommended that the company take a few days of consultancy, so an expert can challenge your assumptions and ask the right questions. That's important, agreed Hay, because the systems' users need to establish a common vocabulary in dealing with the bug-tracking process. One large multidivisional client, Hay said, spent a year-and-a-half arguing over the bug-tracking definition of the word "closed." Eventually, they agreed that it meant "the company won't spend money to fix it."

Assign issues to the correct people, based on their expertise and responsibility. If your software enables you to automatically assign tasks based on the text of the bug report, such as "anything that mentions performance should be routed to Laurie," take advantage of that feature. Because programmers like to help their friends, said Cooper, a developer is apt to take on bug fixes even if he isn't the appropriate person. Whether it's accomplished in software or more usually by a project lead or QA specialist, it's time-effective to establish a firm assignment process.

TRACKING TIPS

If you do a good job of categorizing bugs, you'll get more than a set of pretty management reports, useful metrics and a sense of satisfaction from contemplating what your team's accomplished in the past few weeks. Effective tracking and priority-setting lets developers know which of the outstanding issues will be fixed in the next release, said Data Information's Varner, and it helps them set deadlines.

But be careful about what goes into the tracking system. Don't put in bugs that will never be fixed, said Red Gate's Davidson; they just clutter up the system and lower morale. Also, decide when a bug ought to be entered into the bug-tracking software. Many developers tend to use the software to record bugs in their own code as a sort of to-do list, said Steve Schimeall, senior consultant for Segue Software Inc. These bugs, which the



Bug Tracking?

Defy Convention

Be a Hero*

Date: Thu, 7 Dec 2001 23:58:38 -0800 (PST)
 From: [redacted] <[redacted]@[redacted].com>
 To: [redacted]@[redacted].com
 Subject: EXCELLENT JOB!!!

OK, you have defied convention. Each of the last 5 or 6 bug tracking system changes I have been through (going way back to [redacted]), has been a bigger piece of [redacted] than the last.


I have put off using this "ExtraView" as long as possible, figuring it would follow the same pattern all the previous "upgrades" have. Tonight I finally had to look at a few things, and I just dove in.

ExtraView seems to be much nicer. And while there are some other things that I will want to do that I don't know how to do yet, I was able to update several bugs quickly and without any training, guidance, or help. This is way cool!

Congratulations on doing a great job getting us a bug tracking system that is actually better!!!

* First-time user congratulates his management for choosing ExtraView.

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STALKING DEFECTS

← continued from page 30

developer will fix herself and nobody else will see, are of questionable value to the organization because they don't impact anybody else. Plus, Schimeall said, "honest guys tend to lose by doing this," because they're confessing minor errors to the whole team. Instead, he suggested, enter bugs only when the integration affects more than one person.

However, don't leave out suggestions and feature requests. New ideas should be entered in the system, even if they're immediately marked as "deferred to the next version," said several managers. It can be useful and sometimes important, though, to give such suggestions a time-sensitive deadline, or these "wishes" will fall to the bottom of the priority list and stay there.

Don't underestimate the value of peer pressure. Anybody who's working on a project should be able to see the reported bugs, managers said repeatedly, both for general communication purposes and for the development staff to police itself. "Everyone picks on the bug generators about 'another round of bugs created by so and so,'" said Connected Software's Beveridge.

It's important to establish which data will be visible to which users. For exam-

ple, customers who enter bug reports over the Web shouldn't see a bug's priority setting. You also need to define who is expected to set those priorities and who is permitted to close bugs. According to Geoff Schardein, senior director of sales at Seapine Software Inc., developers should never be allowed to close their own bugs. "People don't catch their own mistakes," he said.


Ensure that people aren't overwhelmed by information irrelevant to their jobs. Keep people informed, but don't overload them. At PMI Group, Pullem said, developers see only the bugs related to their own projects. If the system can send out e-mail notification of status changes, send them only to the developers directly affected, and to the project and QA leads. Otherwise, suggested Schardein, everybody will be deluged with e-mail and won't read any of it.


Overall, stay aware of what your QA tools can do, and what they cannot. "A bug-tracking system is like oil in an engine," said Beveridge. "Oil allows an engine to operate fast and efficiently, but oil can't fix a damaged engine, can't make a lawnmower engine into a Ferrari engine, and most definitely can't keep the driver from running into a wall." ■


Esther Schindler is a freelance technology journalist.

DON'T WASTE YOUR BUGS


"I can look at a few statistics from your average bug database and tell you, with some accuracy, when the product will ship—if ever," said Jim Beveridge, president of Connected Software Inc. The information you collect as part of your development and QA process is useful for more than the short-term task of shipping a project on time. It's a database ripe for mining, and it can provide you with both predictive and historical data—if you know what to look for. Here are some tips on how to use your bug database.


 Look at which files are changed often, said Nigel Chanter, Perforce Software Inc.'s COO. It might be a pointer to weak code.


 From time to time, analyze the types of problems that are reported. For example, said Steve Schimeall, senior consultant for Segue Software Inc., you may find allegedly "working" code that generates problems in every module that accesses it. Taking the step back to examine the source of the problem can help you realize when it's time to rewrite the offending code.

 Examine how often bugs get bounced back and forth between development and QA, noted Neil Davidson, technical director at vendor Red

Gate Software Ltd. That's a danger sign.

 Be leery of anything that tracks bugs as a measure of individual performance. Aside from its Big Brother connotations (and the resistance that developers will have to being watched in such a manner), Schimeall advised that too many human factors are involved for individual statistics to serve as a useful metric. But such features can be helpful to a manager who wants to find the organization's strengths and weaknesses.

 For every 10 hours of development, said Beveridge, you need 6-plus hours of QA (excluding both QA and development project management). Half to two-thirds of QA time will be spent after a feature is complete, for system, integration and performance testing. As a result, Beveridge said, "I can tell anywhere in the project if enough testing is being done by looking at the number of hours of QA versus development."

 Also, Beveridge said, if testing is being done along the way, are they finding enough bugs? An absolute minimum of one bug per developer per day is expected, and more is not surprising.

—Esther Schindler

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EDITORIALS

Breathing Space

Within the past few weeks, both J2EE and .NET have begun the advance to the next level: Microsoft unveiled its “.NET Phase Two” vision, and Sun’s Java Community Process released Java 2 Enterprise Edition 1.4 for public review.

Everyone is excited about the potential advances that these next-generation platforms might offer. But let’s not forget that in the short term, innovation makes developers’ lives more difficult. Who knew what new buzzwords, specifications, imperatives or other platform changes Microsoft and the JCP might throw at us?

Anyone looking for quantum changes in either .NET or Java would be disappointed. Fortunately.

Microsoft’s vision for Phase Two lacked the turning-the-world-upside-down impact of the original .NET vision, and the biggest change that developers can look forward to will be the introduction of Windows .NET Server as the successor to Windows 2000 Server. While the new operating system integrates the .NET Framework, developers already can download and install essentially the same .NET runtime components into Windows 2000.

In the Java camp, J2EE 1.4, expected to be approved early next year, focuses on incorporating a number of Web services protocols into the base standard—and those protocols, such as JAX-RPC and JAX-M, already are available to Java developers through Sun’s Java Web Services Developer Kit. With the exception of a revamped Java Connector Architecture 1.5 spec and the new JavaServer Pages 2.0, Java developers should find little that’s truly new in J2EE 1.4.

So, while technologists might be disappointed, real-world enterprise development teams should be rejoicing. The past two years have seen unprecedented change in the Windows and Java universes, and coders, architects and analysts have been struggling to learn the new technologies, acquire the tools and integrate new concepts such as Web services into their software ecosystems and future plans. If we can look forward to a year or two without revolutionary changes, we’ll have time for the current versions of J2EE and .NET to mature. We all could use the breathing space.

Kylx Embraces C++

Turn on the Way-Back Machine, Mr. Peabody: On Sept. 28, 1999, Inprise Corp. (once and again Borland Software Inc.) thrilled Linux developers with its Project Kylx, a plan to bring its popular Delphi and C++ Builder IDEs to the open-source operating system. The vision always encompassed both C++ and the Delphi language (which was based on Object Pascal), and Linux developers were arguably more interested in the C++ part of the equation than in Borland’s quasi-proprietary offering. After all, most had migrated to Linux from Unix, which is the original bastion of C++ development.

Now, after shipping two versions of the Kylx IDE based solely on the Delphi language, Borland has added the long-awaited C++ compiler to the Linux-based IDE. We’re glad it has delivered on that nearly 3-year-old commitment. ■

.NET PHASE TWO

← continued from page 1

Microsoft’s press-and-analyst briefing, held on the Microsoft campus on July 24, the meeting’s purpose was billed as a road map for “Phase Two of .NET and the Future of Web Services.”

Although there were many hours of presentations in this briefing, from such people as Gates, CEO Steve Ballmer, and Jim Allchin, vice president of the platforms groups, my summary of Microsoft’s vision would be, “Phase One: We provided powerful technologies for building applications with XML-based Web services. Phase Two: Customers should build things with them.” No new technologies or unilaterally imposed specifications. Not even a new programming language for developers to chew on.

Much of the briefing concerned Microsoft’s describing the benefits of .NET and VS.NET for “Breaking Down Barriers in a Connected World,” in particular in four areas: between systems and organizations; to trust between people; to knowledge; and to everyday use of computer technology. Indeed, Gates said the “focus of Phase Two of .NET is on software that creates connected customer experiences that transform the way people work and live.”

To that end, the forward-looking demos showed products that were built atop the existing .NET Framework, such as the Windows XP Media Center Edition, a ver-

sion of the operating system designed to be integrated into living room hi-fi systems; Server Manager Project, a prototype tool that combines Operations Manager and Application Center; a second release of the Office XP Web Services Toolkit; and Web Matrix, a free hobbyist-oriented tool for building ASP.NET scripts (www.asp.net/webmatrix).

While some of those demos were eye-catching, nothing heard during the full-day session presented any innovation building atop the Microsoft .NET products and technologies first described in 2000 to 2001, and shipped in February, with the possible exception of a new XML-based file system hinted at for a future version of Windows.

The company did reiterate its support for WS-I, the Web Services Interoperability Organization consortium, and for the WS-Security protocols that it’s co-developing with IBM Corp.

During the frequent breaks, I kept hearing the same refrain from other attendees, who included journalists, technology analysts and Wall Street financial types: “I wish Microsoft would tell us something new.”

Actually, something new did appear during Gates’ opening address, where he presented a report card on the company’s progress toward delivering its .NET vision. It was no surprise that he awarded Microsoft an “A” for its delivery of technologies based on XML and SOAP, and for the delivery of Visual Studio .NET. But many were

surprised at his candor on the subject of evangelizing the delivery software as a service, which he graded a “C,” as well as the “I” for incomplete on using Web services to improve the user experience.

There was more candor during the obligatory question-and-answer period, particularly in a question regarding Java 2 Enterprise Edition. Ears across the cavernous amphitheater-style conference hall perked up when Ballmer admitted, “Are there shops in the world that would tell you that they’re J2 shops? Yes, many more than there are guys that would tell you that they’re .NET shops.” But, he added, “a year ago, customers would say, ‘We’re a J2 shop—that’s the end of the story.’ Today, they’re saying, ‘Hey, you want to do a proof-of-concept? We’re open-minded.’” While Ballmer seemed pleased with the progress, he concluded, “We’re not pretending we’re the incumbent.”

Perhaps it’s the realization that Microsoft can’t dictate terms to enterprise developers. Or that the company knows, via Gates’ report card, that while the company has largely delivered the products promised for .NET Phase One, the job of evangelization is not yet complete. For whatever reason, compared with the world-changing views and huge vision espoused by Bill Gates two years ago, Phase Two simply seems underwhelming. ■

Alan Zeichick is editor-in-chief of SD Times.

LETTER TO THE EDITOR

MODELING, SIMULATION COME TOGETHER IN MDA

The numbers in your story [“Modeling Usage Low; Developers Confused About UML 2.0, MDA,” July 15, page 1, or at www.sdtimes.com/news/058/story3.htm] reflect the very real challenge that faces MDA adoption, but I think the real reasons for these responses were not discovered.

The heart of MDA is that it decouples the specification of the business problem from the implementation. Today, specification and implementation are very tightly coupled—software development is a mixture of requirements gathering, coding, deploying and fixing. This need for software developers to specify the solution in their own language has created a huge gap between IT and

business leaders as seen when:

- Business managers no longer take responsibility for the business process. Instead they rely on IT as an excuse—“While solution X was requested, it was nine months late and did not perform as required, so this isn’t my problem.”
- IT has given up trying to talk to the business. In a recent survey of business leaders, only 5 percent said IT was a part of the business-planning process. IT takes whatever requirements it can get and then tries to incrementalize a solution.

While MDA could be applied to existing software development methodologies, that would be like applying a manufacturing robot to assembly lines designed for people.

MDA demands a new business software development approach, and this new approach is unlikely to be appreciated by existing software developers—except in a few rare exceptions. Other industries have already adapted internal customs and operations to similar technological change, and we should try to learn from them.

Automotive, chemical, architecture, and even embedded systems have all seen incredible strides in productivity and reliability when computers are used to mediate between the group that designs the product (business managers) and the group that manufactures the product (software development). Companies in these industries had the same symptoms businesses do today—a huge gap between the designers and the manufacturers. This gap leads to finger-

LETTERS TO THE EDITOR

MODELING AND 4GL

With interest I have read your article ["Modeling Usage Low; Developers Confused About UML 2.0, MDA," July 15, page 1, or at www.sdtimes.com/news/058/story3.htm].

The article states that BZ Research surveyed 226 developers. Were the majority of developers 3GL developers? If this was the case, then the outcome of the research does not surprise me. In my experience 3GL developers do not like modeling; they like coding, and when code is generated from a model, a 3GL developer will dislike this as much as he dislikes code written by someone other than himself. In addition, as much as 3GL developers dislike modeling, they like "code visualization," which is a UML model of the actual code, for example a UML diagram that shows Java classes.

The issue currently, however, is that Java and especially the J2EE and .NET platforms have grown into such complex sets of technologies that they require highly skilled and therefore expensive resources to master them.

The complexity of the J2EE platform widens the gap between business requirements and technical implementations so that it requires a number of translations and will therefore create interpretation errors. The result is that the application does not provide the functionality that is required to support the business.

pointing and withdrawal. A clear sign that the system is broken is when everyone involved in deploying and adopting the solution isn't involved from design through manufacturing and to deployment—since trade-offs will be made all along this route.

In each industry that I mentioned, the process was fixed through a combination of technology and organizational change. In every instance the technology that drove the improvement was a combination of modeling and simulation. The design and manufacturing groups were reorganized and linked by a common shared model. With simulation, the impact of any design decision is seen almost immediately by all other designers that have interrelated components. In advanced systems the designers

The solution, in my opinion, is not to persuade, for example, 3GL developers to use modeling tools. The solution is to allow, for example, 4GL or COBOL business developers to model applications from a business perspective and to use a tool that automatically transforms this business model into a J2EE application with proper use of JSPs, EJBs, etc. After this the 3GL developers can customize the generated application where needed. The aim should be to generate about 60 to 70 percent of the application automatically.

Automatically transforming models into a proper architecture and eventually into a working application is what OMG's Model Driven Architecture (MDA) is aiming at. The key thing that MDA does not have yet is the rules to transform the Platform Independent Model (PIM) into the Platform Specific Model (PSM) and eventually into code. The solution here is the use of transformation patterns. OMG is currently working with IBM and Compuware to define this standard and make it part of MDA (see, for example, <http://cgi.omg.org/cgi-bin/doc?ad/02-04-10> for a proposal on this). In my opinion, modeling and MDA offer the ultimate in application development productivity and flexibility and I'm confident that 4GL business developers, designers, analysts and architects see the benefits that modeling offers to enable

them to produce business applications on complex platforms such as J2EE.

Edwin Schumacher
Director of Product
Management, Compuware

Great article. I'm glad someone is finally revealing the reality about UML.

Ben Ettlinger
Lead Data Administrator
New York Power Authority

NOT MUCH HELP

This article ["Intel Says Recompile Is Optional for Itanium 2," July 15, page 18, or at www.sdtimes.com/news/058/story17.htm] is truly not helpful. First off, to claim compatibility with previous Itanium executables is a non-event. How about compatibility with x86 code? How does that work? Your article is not relevant to the concerns that are really out there.

Donald Courtney
Sun Microsystems Inc.

ROOM IN RDBMS MARKET

I read with some interest the Industry Watch article by David Rubinstein ["Relating to Mature Database Market," June 15, page 34, or at www.sdtimes.com/cols/industrywatch_056.htm]. When you look at the RDBMS market place and No. 4 Sybase's revenue of nearly a billion dollars, it is not surprising IDC's Carl Olofson says there is room beyond the big three. What I found more interesting was the comparison of the "non-leading" vendors, meaning the RDBMS makers

excluding Oracle, IBM and Microsoft. The whole idea that several companies mentioned have been around as long as they have shows the value of their products. Olofson is definitely onto something when he identifies the embedded marketplace as able to fully sustain an RDBMS vendor. After all, according to studies of embedded databases from both Gartner/Dataquest and IDC, Sybase is strong in that area and Progress is No. 1, including beating out the big three.

It brings up an age-old question of how do we really measure success of a product? If we look at number of licenses sold instead of dollar revenue, then vendors aimed at the small company market win out. The entire market rankings turn upside down if we look at other factors such as number of companies, sites or users. If it were up to numbers of users, then Progress would actually come out the winner.

In an era of economic concerns and focus on ROI, perhaps we should simply be using something like a cost-of-ownership study instead of revenue figures—particularly with how some companies today seem to have accounting concerns.

Geoff Crawford
Innov8 Computer
Software LLC

CORRECTION

Starbase Corp. has released version 5.2 of its StarTeam MPX Server. An article in the Aug. 1 issue gave different version numbers for the product.

ate platform and the operations measured to determine if the project met expectations. As an added benefit, the simulation can be used to prepare impacted organizations for the change, and when operational data is accumulated, this can be used to improve the accuracy of the simulation.

Note that this was a long and arduous trip for every industry that had to adopt modeling and simulation, but every one has seen huge benefits and recognize that there is no turning back—the efficiencies are simply too huge. It will be interesting to see how long existing organizational inertia will delay the adoption of these principles in software development, and MDA is the initial proof point.

Tim Sloane
Director
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TAKING CARE OF ENTERPRISE CUSTOMERS?

In the world of software development tools, the 30 days from mid-June to mid-July will definitely rank as one of the most peculiar periods ever. Two well-known product lines disappeared in dramatically different fashion, although both were insufficient, I believe.

Let's start with Hewlett-Packard's removing itself from the middleware game by shutting down the Bluestone unit it acquired just a few years ago. In fact, Bluestone was the first acquisition made by Carly Fiorina after acceding to the throne. Earlier this year, in the face of tough competition in the middleware and Java app server space, HP began to offer the Bluestone server for free. (Advanced implementations had to pay licensing fees, but the free software was plenty robust.)

The acquisition of Compaq meant that HP could no longer have the necessary patience to cultivate this investment. So, after weeks of indicating it wanted to close down Bluestone, it did, as reported last issue. One acquisition deep-sixed by another. Now HP will team with BEA and hope this combination can thwart the remarkable progress IBM has made in gobbling up market share with its WebSphere server. At least, that's BEA's hope. HP's goal, I think, simply is to not lose money on

projects that will not show a positive cash flow soon. As a result, it's putting its software dollars into the software where it has traditionally performed well, specifically the OpenView product, which has been capably managed for years by Patty Azzarello. For reasons I'll touch on later, between HP, BEA and IBM, I'll take IBM.

Shortly after HP's official abandonment of a strategy that was once held out to be integral to its enterprise-software efforts came the biggest caper in the tools business that any of us editors could recall. What happened to WebGain?

WebGain was launched in 2000 by BEA and Warburg Pincus as the premier vendor of Java development tools. Its unspoken but widely understood goal was to sell enterprise-capable tools that targeted the BEA platform. With a chest full of cash, WebGain bought Symantec's VisualCafé, the Object People's TopLink O-R mapping tools and Tendril Software's UML modeling product.

With this product lineup, BEA installed one of its better-known executives, Joe Menard, at WebGain and said, "Go to it." But as Sun currently is dis-

covering, a suite of aggregated tools that weren't designed to work together does not excite many customers. As every year passed, WebGain added different products, some bought, some leased (my most recent version contains Macromedia tools and manuals). And with every year, WebGain slipped further and further off the radar. Then in late June, reports started circulating that the company was going under in a kind of weird stealth way.

Calls were made to WebGain to hear the company's spin on things. These calls went unanswered. Calls to the founding investors, BEA and Warburg, went equally unanswered. Off the record, BEA spokespeople were saying the company was dead, but for the record, nothing. Eventually, an enterprising

local reporter drove down to the company headquarters in Santa Clara, Calif. The parking lot was empty and the doors padlocked. Then, new rumors began to circulate that the company was alive and simply selling its product line to an undisclosed vendor. At this point, a week had passed and not one official word about WebGain had been spoken.

Finally, Oracle clarified things a bit by announcing it had bought the company's TopLink package and taken on about 90 WebGain employees. Once it

closed the transaction, Oracle kicked off—to the amazement of many—a campaign to woo WebGain's other customers by capitalizing on the uncertainty around the company's fate. Borland and Sun announced similar wooing consisting of conversion aids and discounts to the now-marooned WebGain customers. What a way to go! And weeks later, there is still no explanation. Curiously, the WebGain Web site is still up and running with information on making purchases.

Although HP and WebGain handled their demises dramatically differently, they both ended up leaving in the lurch the enterprise customers they'd assiduously wooed. When people marvel about how IBM does so well year in, year out, I frequently point to its unwillingness to take this path. Sure, IBM has discontinued products. But enterprise products? Very rarely. For example, remember OS/2? The latest release of DB2 still supports it, even after all these years. SNA, MVS and VSE—yup, all supported still. So, when it comes to enterprise software, is it any surprise IT managers feel safest dialing Armonk? Not to me. If BEA and HP want to battle the beast, here then is the first lesson: Care for your customer. ■

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

MIDDLEWARE WATCH



ANDREW BINSTOCK

Meet the Database Developer's Boss

After all these years, he still gets a rush from entering the data center. As a database developer in the early 1980s, he cut his teeth on IBM System/370 mainframes and CICS. Today, the department he manages uses System/390s for heavy lifting, while also building new applications using a three-tiered model with Oracle running on Solaris on the back end.

The transition from dumb terminals to client/server to the Internet isn't as crazy as it seems. One thing that hasn't changed: the too-short deadlines. When the CIO wants a new feature, she wants it yesterday... and that's particularly true with the latest Web initiative. Allowing customers to read their account status is easy. Allowing them to update those records in real time is no picnic. That's why the RFPs he's been sending to middleware vendors stress that all suppliers have to provide solid mechanisms for ensuring the integrity of the primary customer database, plus the ability to access the multitude of databases that have cropped up over the years.

The technical journals? He's long past the days of writing SQL queries or building tables — his job is to guide his company's progress by directing the development teams. He needs a wide-angle view of the entire spectrum of application development tools: product roadmaps, not how-to tips and tricks. He needs to know the trends, the products, the alliances, the NEWS and what it all means. That's why he reads *SD Times*.



Meet the .NET Developer's Boss

Last week, she finished looking at the betas of Visual Studio .NET and other portions of Microsoft's .NET strategy. It's not perfect, but it'll do. She's been successful in reducing the number of deployment platforms in the server room to three: Windows, HP-UX, and AS/400. Although Linux and J2EE have a lot of potential, the CIO agrees that for now, it makes more sense for her team to continue following the Microsoft track to leverage huge investments in software, training, and code.

But that doesn't mean that she blindly follows Redmond's advice. Windows and COM+ are only two pieces of a very complex puzzle. Her department still has a lot of programmers who know Visual Basic 6, and she has no intention of retraining them to use C# or C++, or forcing them to abandon Delphi, JBuilder, or Rose. Somebody has to be the voice of reason and it can't be the individual programmers, who care more about cool interfaces and not enough about component reuse and cross-project standards. That's why she controls the checkbook.

What does she read? Not the Visual Basic or code-centric programming magazines. They're too hung up on the latest technical details; immersing herself in SOAP APIs won't help her manage a 40-person software team. Not Web sites. MSDN is great for explaining Microsoft's newest buzzword, but doesn't provide the balanced big-picture view she needs. She needs to see it all: all the vendors, all the languages, all the platforms. She needs to know the trends, the products, the alliances, the initiatives, the NEWS, and what it all means. That's why she reads SD Times.

SD Times SOFTWARE DEVELOPMENT
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PUDGY, BUT WITH AN AROMA OF OPPORTUNITY

To cleanse my palate somewhat after last issue's rant, I dusted off the test lab equipment and set up a clean Windows XP Pro installation followed by the beta version of XP Service Pack 1. After all, this Service Pack has been purported to be far more than simply a bug fix fest, including not only Redmond's first tangible response to the Justice Department, but also a significant new twist to PC multimedia support and interface design. Is there anything for developers here?

Bottom line: Users can expect quite a bit from XP SP1; developers will see more in the way of potential than immediate gratification. The list of security fixes and application updates is lengthy, but what will hit with more impact are the new Start menu options and Windows Media Player 9 (previously dubbed "Freestyle").

The new UI modification feature can be accessed either via Start or through the Control Panel, and it allows users or OEMs to select or hide different Microsoft technologies. Currently, you can choose to "see" or "hide" only Redmond's components: Internet Explorer, Outlook Express, Windows Media Player, Windows Messenger and the Java Virtual Machine. If you read last issue's column, you're well aware of why almost

everyone will choose to "hide" Microsoft's archaic JVM. And by the way, "hide" doesn't mean these components aren't installed, but simply that users can't see or access them. Pudgier and pudgier.

Interestingly, though, when you install XP SP1 on a system already running Netscape Navigator, AOL and Eudora all set as the default system applications for their specific tasks, Microsoft actually turns the tables. Users are presented with a one-click option to return all their default settings back to their Redmond equivalents, while keeping their current default settings is handled under a "custom" menu option. It's not that hard to figure out, but Windows developers can expect additional user confusion if their applications intend to compete with the Microsoft equivalents mentioned above.

Far more interesting than the Start menu, however, is the Freestyle extension to Windows Media Player. The basic concept here is to take another stab at securing the PC a place in your home entertainment equipment rack. Redmond intends to make this thrust around the holiday season this year,

offering this enhancement as a separate XP Home offshoot dubbed "Windows XP Media Center Edition." Near as I can tell, that means Windows XP Home with SP1 and an additional interface enhancement allowing users to utilize a remote control.

Now I know what you're thinking: "He's going to pan this because it's just a sad rehash of something that's been tried before and failed." And I suppose I could. XP Media Center has a lot of things going against it. For one, its success is obviously relying heavily on the equal success of Redmond's Corona—a server- and developer-side enhancement to WMP involving new codecs and development tools intended to "bring television video quality to the Web." Given not only the economy but the devilish problems tormenting the telcos right now, that's a long shot at best for the near future.

And while Microsoft has hardware vendors already signed to deliver XP Media Center Edition boxes (notably NEC and Samsung), the problem here is still going to be the display, just as it was when Gateway tried this move a few years back. Few folks want to pay for a PC-compatible display you can comfortably view across the room—especially not this year. Worse, XP also requires TV tuner hardware in the host

PC as well as infrared capability—that last is ubiquitous, but the former is a real pain for the average joe to install, which further pushes unwilling consumers toward a new hardware purchase. Makes you wonder where the Xbox is headed.

And yet, I have to say I liked it. Admittedly, I was using a 21-inch screen and so was still within 3 or 4 feet of the PC, but the interface was fairly polished for a Microsoft beta, had an elegant and impressive design, and was obviously well thought through. All the basic music and video functions were there, but there were also a few neat combinations (such as the ability to easily play music while zipping through slide shows or home videos).

It may be a tad early, but if you combine XP Media with digital home video equipment, DTV and Bluetooth, suddenly media-oriented application developers have a wide array of new opportunities—games, Web collaboration, media editing and playback, and even home automation.

And for a sneak peek: Look for Visual Studio .NET enhancements designed to take advantage of both XP Media Center as well as Corona in the near future. ■

Oliver Rist is a technology journalist and vice president of technology at AIC Inc.

WINDOWS WATCH



OLIVER RIST

HP LEAVES DEVELOPERS BEHIND

As you know by now, Hewlett-Packard has decided to get out of the middleware business. Specifically, say goodbye to Netaction Application Server, Netaction Web Services Platform and Web Services Registry. They're toast. (See "HP Dumps J2EE Software Stack," Aug. 1, page 1.)

So I decided to do a totally unscientific survey of my Java developer friends. I called and e-mailed a dozen or so of them and asked about their use of HP products. Almost all of them had HP printers, three of them had HP Pavilion desktops, and one develops for HP-UX, the company's flavor of Unix. One had used Bluestone, before HP acquired it in the fall of 2000.

None of them had ever used HP's Netaction.

Giga Information Group says that HP had owned only a miserable 4 percent of the application server market. I'm surprised it was that high.

At one time, I did know some people who were in love with eSpeak, HP's pre-Web services platform, but it went nowhere fast. I also knew some people who liked Bluestone. Some analysts also thought that HP had had a chance to become a major power in Web services. That was then. This is now.

Today, I can find lots of WebSphere developers, plenty of WebLogic coders, a swarm of iPlanet programmers and a surprising number of hackers working away with Jakarta. It doesn't take an Ada Lovelace to figure out that HP had made a \$470 million mistake in buying Bluestone.

But was it only HP's misstep, or is this the start of a trend of major companies moving away from middleware? I don't see it. Sun and IBM are both doing very well by bundling operating system, middleware and Java tools into one package. Oracle, by joining forces with Dell for hardware and with Red Hat for an operating system, is following in IBM's and Sun's footsteps, only it's doing it with alliances in-house instead.

No, I think HP was in a unique situation. It squandered its eSpeak technology lead. Indeed, at the same time it put Netaction to rest, it finally admitted that eSpeak was as dead as a Norwegian Blue Parrot pining for the fjords.

By the time HP had finished bringing Bluestone on board, the other J2EE companies had taken the lion's share of the Java middleware market. Add a nasty fight over the wisdom of acquir-

ing Compaq and then just the sheer work of merging two giant companies, and HP's Java-based middleware didn't stand a chance.

Looked at in this way, although it will infuriate many developers who have been left stranded by this move, the only thing that's remarkable about HP's move is that Carly Fiorina took so long to pull the trigger. HP's chance—if it ever had one—to be a middleware power was gone.

Too bad she misfired. Oh, it looks good on one level. HP has announced that it is strengthening its partnership with Microsoft for .NET on its Windows boxes and with BEA for its Linux and Unix systems. Developers and customers who haven't had a relationship with HP because they wanted a packaged middleware, hardware and operating system deal but didn't care for HP's middleware offerings might be tempted to give it a try. Existing customers? Ha! That's another matter.

The misfire is that the current customers have been left hanging. HP promises to make all things clear by Sept. 15 with a detailed migration plan. That won't be soon enough for the company's enterprise customers and developers. Granted, there couldn't

have been many of them, but they deserved better than this. After all, rather than going with the more popular J2EE solutions or giving .NET a try, they had elected to stick by HP. HP's moves have been annoying a lot of both HP's and Compaq's old customers. This move doesn't help.

So what happens now to all that HP middleware? No one has a good answer. The rumor mill has it that Oracle may end up buying parts or all of it. After all, Oracle's sales are slumping, and Bluestone, in its day, had a very good reputation. There may be some good left in the products for Oracle to mine. Or, perhaps more likely, Oracle could use experienced HP/Bluestone middleware engineers and developers to incorporate the best of Netaction into the Oracle9i Application Server since it's not setting the world on fire.

Regardless of the middleware's fate, I'm sure of one thing. HP has alienated many of its customers. The real beneficiaries will be its competitors. Sun, IBM and the trio of Dell, Red Hat and Oracle are more likely to gain than BEA and Microsoft, HP's preferred middleware partners. ■

Steven J. Vaughan-Nichols is editor of Practical Technology (www.practical-tech.com) and has worked as a programmer for NASA and the Dept. of Defense.

JAVA WATCH



STEVEN J. VAUGHAN-NICHOLS

RETURN OF THE HOCKEY STICK

There is an old adage in the media that goes, "Bad news sells." Wars, organized crime events, unseemly behavior by politicians and billionaire corporate CEOs getting their comeuppance all produce spikes in newsstand sales.

That adage, it appears, does not carry over to IT analysis. Sales of reports by these analyst firms only increase on good news—the growth of market segments such as application integration or embedded systems, for instance, or the number of developers adopting particular technologies such as J2EE or .NET.

So in this flat summer, with the flow of vendor news slowing to a drip and the national economy rocked by accounting scandals and a battered stock market, a report by IDC predicting 9 percent global growth in IT spending in 2003 warranted a closer look.

Our calls to IDC, unfortunately, went unreturned. So a look around at the economic landscape was undertaken in the hope of finding some tidbit, some upbeat statistical morsel, to support these findings.

According to the latest government indicators, there isn't much to hang this report on. The technology-laden Nasdaq stock market is wallowing in the low 1300s, a level it hadn't seen since April 1997. Quarterly earnings reports from technology companies showed a steady stream of declining revenues and losses instead of earnings. About the only thing going up is the jobless rate.

Meanwhile, consumer confidence remains low, as almost daily reports of accounting irregularities and corporate malfeasance at best, or fraud and criminal activity at worst, continue to drain

money from equity markets, which for so long served as the lifeblood for technology companies. The tech industry's ability to creatively use stock options to lure and retain the best minds is under fire, which could lead to another big cash drain before stricter rules go into effect.

In the IT industry, trade-show attendance and advertising spending are down. If companies are developing new products, how are they letting the buying public know of their efforts? E-mail blasts? Would you buy a \$100,000 software installation from a company you've only heard of via spam?

Yet, for a price, IDC can see what it calls "the green shoots of recovery" beginning to emerge, and expects global IT spending to exceed \$1 trillion for the first time in the industry's history in 2003—and actually surpass the size of the market during the height of the dot-com boom. After all, would anyone bother to buy a report that predicted more economic gloom?

IT vendors can buy this rose-colored report and then show it to their customers, telling them they'd better open up the vault to keep up with the technology Joneses, all of whom are poised to open their vaults, according to the report.

IDC says the economic uptick will become more evident in the fourth quarter, when compared with last year. We should certainly hope so. Last year's fourth quarter was ruined by the destruction of New York's World Trade

Center and the subsequent war on terror in Afghanistan, not to mention the shakeout of the dot-com and telecom markets. But is that an indication that things are looking up for next year?

IDC apparently is applying the hockey stick curve to IT spending. The graph shows a period of flat-lining, depicting current economic conditions, followed by a sudden, sharp upswing, depicting the future. IDC is predicting 9 percent growth in the U.S. for 2003. Japan, which IDC admits will show flat growth for this year, suddenly is expected to show 7 percent growth next year.

The reality is, no one knows what to expect from the economy. The forecasts are all about making the people who control corporate spending believe better times are at hand. The psychology is very powerful. Look what belief did for Dorothy in Oz. In fact, predictions for expansion in 2003 based on a key indicator—the SEMI book-to-bill ratio for new semiconductor chip orders and billing—already have been made in the pages of this newspaper. We sincerely hope they prove themselves out, as we all would benefit.



But if IDC, or any other analysis firm for that matter, could truly see into the future, they wouldn't need to sell reports to generate revenue. They'd be able to make all the money they need by betting on the New York Jets to win the Super Bowl in 2004. ■

David Rubinstein is executive editor of SD Times.

INDUSTRY WATCH



DAVID RUBINSTEIN

BUSINESS BRIEFS

IBM Corp. will purchase **PwC Consulting**, the business consulting and technology services unit of **PricewaterhouseCoopers** for an estimated \$3.5 billion, the companies announced. The sale is expected to be concluded in late fall. The consulting division will be rolled into **IBM Global Services**, which generated \$35 billion in revenue last year. PwC Consulting has estimated fiscal-year 2002 revenues of \$4.9 billion . . . Shareholders of **Starbase Corp.** have approved plans for a 1-for-10 reverse stock split and for equity financing that the company believes are necessary for its turnaround efforts. The company said its quarterly revenue for the period ending June 30 was \$9.1 million, down from \$12.1 million for the same quarter in 2001. However, Starbase's quarterly loss shrank from \$6.8 million in 2001 to \$1.6 million in 2002 . . . **Mercury Interactive Corp.** and **Telelogic Inc.** reported declines in second-quarter earnings from year-ago reports, while **Rational Software Corp.** reported first-quarter 2003 revenues decreased 13 percent to \$152.5 million from the same quarter in FY 2002. **Sybase Inc.** showed revenues declining for its second quarter to \$205.3 million from \$234.7 million a year ago, although the company reported an increase in pro forma earnings of 2 cents per share over the same period. On the positive side, **Informatica Corp.** reported an increase in Q2 revenues of \$600,000, to \$49.1 million, compared with the same period in 2001. **Sun Microsystems Inc.** reported fourth-quarter revenue of \$3.4 billion, up from \$3.1 billion in the third quarter. ■



CALENDAR OF EVENTS

XML Web Services One Aug. 26-30
Boston
101 COMMUNICATIONS LLC
www.xmlconference.com

Quality Week Sept. 3-6
San Francisco
SOFTWARE RESEARCH INC.
www.soft.com/QualWeek/QW2002

Windows Server DevCon Sept. 3-6
Seattle
MICROSOFT CORP.
www.microsoft.com/misc/external/serverdevcon

Comdex Atlanta Sept. 9-13
Atlanta
KEY3MEDIA GROUP INC.
www.comdex.com/atlanta

VSLive Sept. 14-19
Orlando, Fla.
FAWCETTE TECHNICAL PUBLICATIONS
www.vslive.com/2002/or

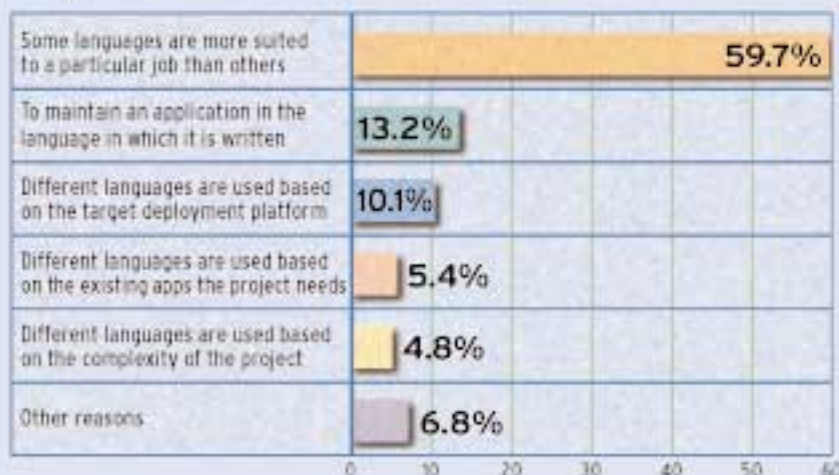
Internet World Sept. 30-Oct. 3
New York
PENTON MEDIA INC.
www.internetworld.com/events/fall2002

Mac OS X Conference Sept. 30-Oct. 3
Santa Clara, Calif.
O'REILLY & ASSOCIATES INC.
<http://conferences.oreillynet.com/macosex2002>

Web Services Development Conference Oct. 1-2
New York
BZ MEDIA LLC
www.wsdevcon.com

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

If You Use Multiple Languages, Which of the Following Best Describes Why You Use More Than One?

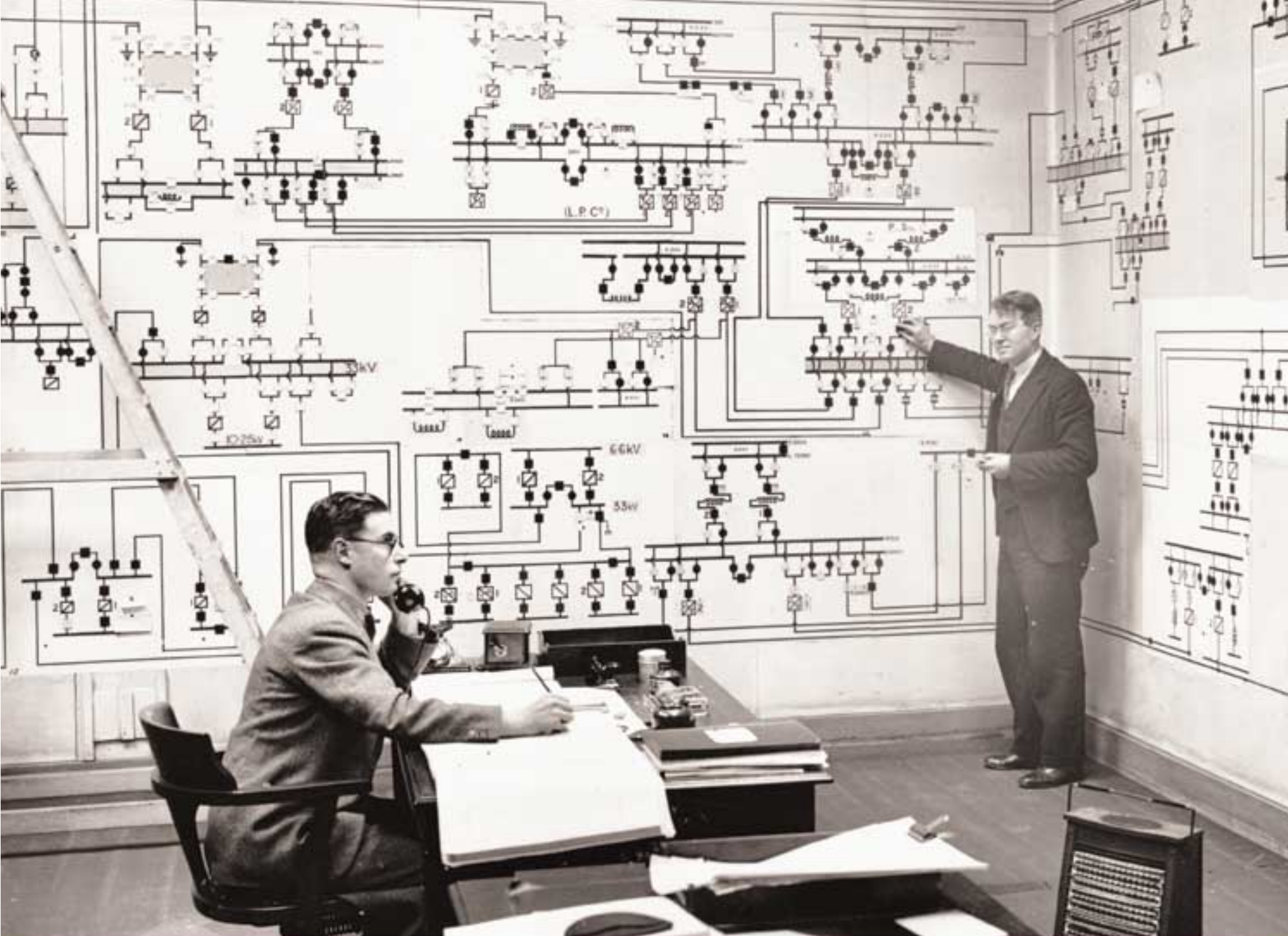


EVANS DATA WATCH

While some developers—and development shops—have focused on a programming language, that's not universal. Indeed, 60 percent of the enterprise developers in this survey agree, in fact, that some languages are more suited to particular jobs than others.

Going forward, development shops will continue to be multilanguage shops as far as the eye can see. No single language is suitable for all the applications that must be built and deployed to support various aspects of business.

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